Editorial Notes.

THE REGISTER OF CHEMISTS AND DRUGGISTS.

VERY important action is now being taken by the Registrar under the Pharmacy Act. The tenth ection of that Act gives him authority, if no answer e given to two registered applications, to assume the on-existence of the chemist and druggist so addressed, nd erase his name from the Register. A preliminary otice is now being posted to every person on the Register except to those who are in regular communication ith the Pharmaceutical Society. Every person receive ng such a notice should reply to it promptly, and this will ave trouble to all parties. But we are further informed, s indeed we have ourselves very good reason to know is he case, that these applications are coming back by hunlreds through the Dead Letter Office. Probably half of hese have not found their way because the address given in he Register does not correspond with the address of the erson there named. We estimate, by comparison with ur own Register, that there are at least a thousand names n the official Register with incorrectly-given addresses. e now have to acquaint the trade with this very important notice. That unless the Registrar is advised of the orrect address in time, the name will be erased, and will ot appear on next year's Register. We may add that this ourse is perfectly legal, and indeed is quite necessary if e registration of chemists and druggists is to be anything ore than the emptiest form.

HEMISTS AND DRUGGISTS AND JURY SERVICE.

ITH reference to this subject, it will have been noticed at the Attorney-General has distinctly promised to introce a Bill to revise in certain points the conditions of ry service. We have submitted to Sir John Coleridge the ims which we think chemists and druggists as a body ve for exemption, and we have no doubt these claims will carefully weighed by the learned gentleman. If no such use should appear in the Bill when it is brought forward, will then rest with those most interested to address themves to the House of Commons collectively, and to their resentatives individually, in order to induce a consideran of the subject in committee. We hope that, at this portunity, a respectful submission of our case will receive equally respectful attention from our legislators.

CHEMICAL ACTION OF FILTERS.

. WANKLYN, who has recently made some experiments th filters for the *British Medical Journal*, has proved that a werful chemical action may be exerted on water by the re process of filtration.

Water containing nitrogenous organic matter was introced into a silicated carbon filter, and, from the decompoion therein effected, the resulting ammonia was obtained the same manner as by boiling with alkaline permangate. Mr. Wanklyn seems to conclude that a porous filtering dium is necessary to produce this action.

These experiments serve to place the filtration of drink-water upon a far higher footing than that to which it hitherto attained, and they also furnish a strong corroation of the assertion so often made by the manufaccrs of the filters above alluded to, viz., that they exert a mical as well as a mechanical action upon water.

POISONS IN NEW ZEALAND.

AN Act has passed the General Assembly of New Zealand based on our Pharmacy Act, and described as the "Sale of Poisons Act, 1871." It provides that only registered persons shall sell poisons after the end of 1871 under a penalty not exceeding five pounds. But it also provides that *any* person who wishes to sell or keep open shop for retailing, dispensing, or compounding poisons in any province or other division of the colony for which a registrar has been appointed under this Act may be registered under this Act, without fee or reward on application to the registrar personally or by registered letter. The Governor of the colony is to appoint registrars for each province or other division; and the Act also gives the Governor authority to make and to vary or rescind from time to time any regulations as to the retailing, dispensing, or compounding of poisons, as may seem expedient. The regulations at present prescribed are exactly similar to those in force in this country. Also the schedule, with its part one and two, is a copy of ours in its amended form, with one important exception, namely, that while "all preparations of opium or of poppies" appears in part two, opium itself, and also laudanum, are subject to the more stringent regulations of part one. This is doubtless enacted with a view of preventing as far as possible the demoralisation which might result if the Chinese immigrants should extend the practice of opium-eating.

PETROLEUM.

HOWEVER nearly we may be approaching the end of our coals, it has been ascertained that the world contains petroleum enough to last until the grandchild of the latest born baby shall no longer care for light or heat. It has not been thought necessary to carry the calculation farther, for the most strained courtesy would hardly insist that we should interest ourselves in a generation remoter than the one we have named. The oil is at present obtained from a certain limestone, which is to be found throughout the United States, and it is highly probable that if this should ever be exhausted, a still more abundant supply will be found in other strata. It would not seem that the petroleum originates in this limestone, but that the latter is merely saturated with it. In the neighbourhood of Chicago there are enormous deposits of this oil-bearing limestone; some of the houses in the city are built of it, and after a while present a smeary appearance, from exudation of the oil. The least thickness of the mass is thirty-five feet, and it has been estimated from experiment that each square mile of it contains 7¾ million barrels, each of forty gallons, of petroleum. As a means of comparison, it may be stated that the total product of the great Pennsylvania oil-region from 1860 to 1870 was twenty-eight million barrels. Four square miles of the Chicago limestone contain a greater quantity.

NEW YORK PHARMACY BILL.

ON the eve of going to press we receive New York papers of the 29th ult., reporting the passing of a Pharmacy Bill for New York State in the Albany Senate. This Bill abolishes the Board of Pharmacy appointed by the Mayor a year ago, and substitutes for it a new Board to be appointed by the College of Pharmacy. It also provides regulations as to the sale of poisons. The Bill was passed by the persistent efforts of Senator Weissman, but it has been opposed with equal persistence and determination by Dr. Doremus, the President of the doomed board.

THE MYSTERIOUS COUNCILLOR.

In another part of this journal will be found the names of the gentlemen who will go off the Pharmaceutical Council this year, though many of them will doubtless stand for, and some will secure, re-election. Among this list of names will be found that of Mr. Carr. We have suffered some agitation before with regard to this gentleman; but having borne our burden for eighteen months without relief, we think we now do well to be impatient. The advent of Mr. Carr will be remembered. He was elected by the Council itself to fill the vacancy occasioned by Mr. Brady's acceptance of the Chiltern Hundreds. Chosen by the chosen, we had good reason to anticipate great things of Mr. Carr. As far as we can tell, excluded as we are from the Olympian sanctum where the councillors do congregate, Mr. Carr has never realized those hopes, nor justified those anticipations. Since the day when his light was first flashed upon us until now, it has been as carefully protected under the bushel of mediocrity, as it ever had been previously. The provincial reader may remark that, seeing that Mr. Carr's address is given in a main thoroughfare of London, he ought to be known to metropolitan chemists. Yes sir, he ought, but he is not. Our special reporter, whom, when he was first brought forward, we despatched to the neighbourhood with instructions to buy an ounce of cough lozenges, and "interview" the gentleman at the same time, returned disconsolately. He had scoured High Holborn, but found no trace of Mr. Carr. He was not Cockney enough to know that High Holborn has a tail curling round to Drury-lane, in which tail we believe Mr. Carr's establishment is to be found. Perhaps Mr. Carr will not seek Council honours again, in which case we shall have neither wish nor right to ask that his virtues shall be displayed. But if, after a year and a half's experience of his legislative and pharmaceutical inertia, we are again asked to vote for him, we may fairly hope that some kind friend will suggest a reason. A bad one will be better than none; but unless he is peculiarly rich, or peculiarly good-looking, or peculiarly something, we fail to see why he should longer occupy a seat in the Pharmaceutical Parliament; a position which is, and ever should be, an honour worth striving for, and one which should be reserved exclusively for aristopharmacists.

THE EFFECT OF TEMPERATURE ON SPIRIT.

Mr. E. B. Shuttleworth, the editor of the *Canadian Pharmaceutical Journal*, calls attention to a well-known physical fact, the result of which is seldom considered. The expansion and contraction of spirit and spirituous liquids by variations of temperature, may not quite inappreciably affect the value of the druggist's stock; particularly if those variations run on the Canadian scale, where it is not by any means impossible that the liquid may be exposed to a cold, twenty degrees below zero, Fahrenheit. Mr. Shuttleworth found, by direct experiments, that 100 measures of spirit, 65 o.p. at 60° F. would measure only 98·3 at 30° F., 96 3, at 0° F., and 95·2 at —20° F., while his figures also show that from 60° to the alcoholic boiling-point (173° F.) an increase of bulk of 10 per cent. may be expected. It is evident, therefore, that in purchasing alcohol, measured at temperatures below the standard, an amount of spirit is gained proportionate to the decrease of temperature. In measuring alcohol for use, or sale, at temperatures below 60° F., the loss follows the same law. Thus, a 50 gal. barrel of alcohol, filled at the standard temperature, will only furnish 49 gals. at ordinary (Canadian) winter temperatures, say 25° F.

MEMORIAL TO DR. PRIESTLEY.

A committee has been formed in Birmingham which proposes to honour the memory of Dr. Priestley, and to commemorate his discoveries and his services to the scientific world by the erection of a statue in that town, where he lived so many years. No other public and special memorial of Dr. Priestley exists; and although the honour comes rather late, this local effort must command the sympathy of all scientific men. Dr. Priestley's ghost will, we hope, pardon the lateness, and will agree with us—if he reads The Chemist and Druggist—that with such an army of scientific celebrities as have lived since his time, it is no slight compliment to go back a century to pick him out. He was the father of pneumatic chemistry, the discoverer of oxygen, and one of the most illustrious men of science whom the last century produced. Two years from this will be a very appropriate date to uncover such a statue, for it was in 1774 that he made those experiments which resulted in the discovery of oxygen, and thus cleared the path for so many and valuable other discoveries which are directly traceable to that one. Nearly five hundred pounds have already been subscribed.

SCHEDULE D.

A general impression seems abroad that in his next budget the Chancellor of the Exchequer, having a trifling surplus of some three or four millions or so, is going to perform some financial sleight-of-hand, to make it appear very much larger, and, casting off his assumed character of heartless cynic, will appear before us with benevolence beaming in his countenance, to assure us that his apparent harshness hitherto has been only for our good, and that henceforth he will devote his energies to the task of rendering all tax-payers happy. With the object of guiding the first faltering steps of the right hon. gentleman in the path of liberality, influential deputations have waited upon him to suggest the advisability of abolishing entirely Schedule D. Some score or more associations have been formed throughout the country with the same object; and we also read of enthusiastic rebels who have sacrificed their furniture rather than submit to Schedule D. And in addition to this we believe there are at least a couple of dozen members of Parliament who have signified their hostility to this same ugly dragon, Schedule D. Schedule D, we need scarcely inform any of our readers, all of whom, we hope, are assessed under it, comprehends those incomes which are derived from trades, professions, etc., in distinction to those which are obtained from landed or funded property. Out of a total amount of assessed incomes in the United Kingdom of 398 millions of pounds, Schedule D contributes 166 millions. And yet, with that suggestive fact staring them in the face, "influential deputations" are foolish enough to appeal to Mr. Lowe to abolish the productive Schedule D. Influential deputations might as well save their own time and that of Mr. Lowe. The general impression of the Chancellor's policy is that even the strongest arguments have no effect with him if money is concerned; and assuredly he will be deaf to mere entreaties when 166 millions of sixpences are involved.

A respected correspondent asks us and the trade generally to join in the agitation against this Schedule D. Speaking for ourselves alone, we confess that, much as we should relish the consummation, we see no reasonable grounds to go upon. The argument of course is, that precarious incomes, incomes obtained by the talents, skill, and labour of the head of the family, should be free from taxation, and that permanent incomes alone should bear the burden. On the very same ground it would be fair to urge that professional men and tradesmen ought to be permitted to buy their tobacco duty free. The income-tax may not be fairly adjusted, but we do not believe it to be an "iniquitous tax," nor do we see why any class should claim exemption from it. Direct taxation is very unpleasant, but surely there is no manliness in the popular desire to pay taxes unwillingly, which is the attraction of indirect taxation. Nor can we, except by direct taxation, get even the roughest approximation to a fair distribution of the burden. Besides, we cannot have our cake and eat it also; if we will have 70 millions worth of "government" per annum, let us pay for it in a manly way. Our only plea to Mr. Lowe at this time is that he will extend the principle of a sliding-scale, already in force as far as incomes under £200 are concerned. An arithmetic more conclusive than Cocker's proves that £5 is a heavier proportion of taxation for a man with £200 a-year than is £50 for one with two thousand.

FARINACEOUS FOODS.

The *Medical Press and Circular* has commenced the publication of a special report on Foods, including farinaceous preparations for infants and invalids, meat extracts, Australian meats, etc. In the last issue, Colman's Corn Flour and Sea Moss Farine are reported upon. The first-named is declared to be a pure preparation of rice, as it is advertised to be, but the writer does not seem to draw the conclusion that rice is in all respects so beneficial as Messrs. Colman's fancy paints it. The Sea Moss Farine was placed under the microscope, and "found to be comminuted Carragheen Moss (*Sphæroccus crispus*), cleanly prepared and free from natural impurities," such as sand and sea salt. It gave 1·28 of an ash, which chiefly consisted of chloride of sodium with a trace of iodide. The proprietors of this article, while they use Carragheen Moss, invariably advertise the virtues of Iceland Moss, a perfectly distinct product. The *Medical Press* considers the Sea Moss Farine has been "too loudly heralded."

EXCHANGE COLUMN.

Our Exchange Column contains an interesting variety of bargains and wants this month. We have nursed that column with a good deal of care, almost with affection, because we have believed that it was a sort of thing which the trade wanted. We are glad to see that our readers have taken the idea up, and we have no doubt they will keep it rolling.

Foreign Correspondence.

GERMANY.

THE GERMAN PHARMACOPŒIA, ETC.

Dresden, March, 1872.

The long-expected and desired for German Pharmacopœia, which this time can claim the title with full right, as it will wave its sceptre over the whole body of German chemists, will in all probability appear in the beginning of May, and a detailed report of it must be postponed till this term. I can, however, give an outline of the contents.

The basis of the new Pharmacopœia formed the seventh edition of the Prussian Pharmacopœia of 1862; the compilers of this work had made sad havoc among the *series medicamentorum*, and rejected many remedies of reputation, among them tincturæ arnicæ. A less murderous spirit seems to have animated the authors of the new Pharmacopœia, who have rejected comparatively very few remedies. Among those which have met with no favour from the hands of the commissioners, I mention the following:—Acetum, Decoctum Sarsaparillæ concentratum, Extract. Hellebori, Extract. Ipecacuanhæ, Ferrum Hydricum, Oleum Absinthii, Oleum Balsami Copaivæ, Oleum Chamomillæ Citratum, Oleum Cubebarum, Oleum Tanaceti, Stibium Oxydatum, and Syrupus Communis. But though there appears to have been but little inclination to contract the Materia Medica, there seems to have been abundant willingness to admit new drugs, so that the whole series now comprises 907 numbers.

Of the new preparations, I mention first of all chloralum hydratum; but its reception could be anticipated as a matter of course, and certainly it has fully merited its citizenship. The crystalline sort is officinal. The same can be said of acidum carbolicum. Both kinds, the crude and the crystallised acids, have been admitted. According to Dr. Hager, one of the authors, the latter does not represent the perfectly pure acid; as, by the characters given, the Pharmacopœia allows a small percentage of water, and does not even object to a slightly reddish colour, nor is the solubility in water stated.

Among the principal new preparations are acidum boricum, chromicum, lacticum and valerianicum. Besides chloroform, another anæsthetic has found reception, methytenum chloratum. Of bismuth preparations, bismuthum valerianicum has been added; bromine, too, has become officinal; also, chininum bisulfuricum, tannicum, and valerianicum.

Most remarkable among the extracts are extractum carnis Liebig, extract. Malthi, extract. Malthi ferratum.

Tabac calabaricæ, although on the whole not of frequent use here, have been admitted. To the already long list of iron preparations have been added, ferrum citricum, ferrum citricum ammoniatum, ferrum oxydatum saccharatum solubilis, ferrum pyrophosphoricum cum ammonio citrico.

Hydrargyrum chloratum mite vapore paratum, too, has found a home in the new Pharmacopœia, and so has iodoformium.

Among the liquors, I mention liquor natri carbolici; it is interesting to see that the "liquor" has been restored; the Prussian Pharmacopœia used the expression "solutum," *e.g.*, chlorum solutum, instead of liquor chlori. This return to the original nomenclature is received with much satisfaction.

Some regard to the increasing use of granular preparations has been paid by the reception of magnesia citrica effervescens.

Natrum pyrophosphoricum ferratum, and natrum santonicum, have found favour with many medical gentlemen, and therefore admitted.

The preparations of stibium still appear in full force. I think it not out of the place to quote here a remark made by Dr. Hager, in his "Commentar zur Prussischen Pharmacopœia," 1862; he says there, "Since chemistry has taught us to make sulphuret of antimony entirely free of arsenic, the preparations of it cannot maintain their old medicinal value. Even the celebrated Dr. Hebra, of Vienna, declares that in his opinion the effects of sulfurauratum are not superior to those of fine writing-sand. Its former good effects in catarrhal and scrofulous diseases were owing to a small amount of oxide of antimony. This explains why the physician prefers a badly-kept preparation to a carefully-preserved one."

Syrupus ferri oxodati solubilis is the newest fashionable form of administering iron. Tinctura iodi dicolorata has assumed its place next to its brown-looking brother.

For the benefit of those, who are suffering with a weak stomach or bad digestion, a vinum pepsini has been admitted.

Zincum lacticum and sulfo-carbolicum complete the long list of new remedies.

As already mentioned, the whole series contains over 900 numbers; to keep all these preparations in stock would entail a heavy expense, which will be especially felt by chemists in small country places, where many of these remedies are rarely, sometimes not at all used, therefore it is thought probably, that the keeping of the whole series will not be made compulsory, and that a special series, less copious, will be drawn up to suit the requirements of small towns.

As I am just speaking of Pharmacopœias, I may as well say a word or two about another branch of pharmaceutical literature. Mr. Kernot, of Naples, has written, as your readers will be aware, an interesting book, giving an account of the state of pharmacy of nearly every country on the globe; and which was reviewed by the Chemist and Druggist and *Pharmaceutical Journal*, in a manner very complimentary to the above-named gentleman. Now, according to the *Pharmaceutische Zeitung*, Mr. Kernot cannot claim the honour of authorship; on the contrary, this paper denounces him as a plagiarist. It says, "Mr. Kernot's work is merely a counterfeited edition of Philippo's 'History of Pharmacy,' etc., translated into German by H. Ludwig, 1855." "Some chapters are not only an almost, but entirely literal translation of Philippe; as, for instance, the chapter on England, all the incorrectnesses of which have been thoughtlessly reproduced," etc. Mr. Ullersperger, too, in Munich, had criticised Mr. Kernot's work in the *Neues Jahrbuch für Pharmacia*, believing it to be an original work.

The paper on German pharmacy Mr. Greenish read at the evening meeting of the Pharmaceutical Society, December last year, has been published by the *Pharmaceutische Zeitung*, and has created considerable interest. As may be expected, the German chemists will not agree with all the remarks made by Mr. Greenish; as this gentleman, naturally enough, regards pharmacy from a free-trade point of view, which the German chemists do not. But in one point they fully concur with him, viz., that German pharmacy is suffering from over-legislation. This is only too true; the Government meddles too much with affairs which it had better leave to the pharmacists alone.

To change the subject, I will draw the attention of the readers of this journal to a new base, derived from strychnine, the discovery of which was the last work performed by the late lamented Professor Strecker. When four parts of finely-powdered strychnine, and one part of monochlorine-acetic acid, are heated in open tubes for 4 to 5 hours at a temperature of 180° C., and after cooling the powder dissolved in water, and over-saturated with ammonia, a certain quantity of unchanged strychnine is precipitated; but the filtered solution, on evaporating, yields white, silky, glittering crystal needles, which dissolve with difficulty in cold, easily in hot water and alcohol, but not in ether. Their composition is represented by the formula, $C_{23}H_{21}N_2O_4$; the name of the new base is glycolyl-strychnine.

In 1868 the military authorities of Prussia issued an order, that from 1872 only those chemists' assistants who had passed the major examination, would be allowed to serve their time (one year) as dispensers in the military hospitals; the authorities, however, have found it impossible to carry out this order from want of a sufficient number of such qualified assistants, and so the order has been revoked.

Many chemists, when making vinum colchici, will have felt annoyed by its becoming turbid after filtration, even when most carefully prepared. According to Mr. Vulpius, this is due to the formation of yeast-cells, produced by a kind of after-fermentation. As these cells on account of their extreme smallness pass through the filters, Mr. Vulpius mixes 1,000 parts of turbid colchicum wine with one part of finely-powdered colchicum seed, and passes it four to five times through the same filter. Colchicum wine, so treated, it is stated by Mr. Vulpius, never again became turbid.

At the last meeting of the German Medical Society, Professor F. Schutze communicated a process for obtaining perfectly-formed crystals. The procedure consists in the employment of gelatinous liquors as a dissolvent. The lecturer showed beautifully-formed crystals of borax, sugar, and pektin, which had been deposited in gelatine solutions.

DISINFECTANTS.

BY WENTWORTH LASCELLES SCOTT, F.C.S.

At a meeting of the Midland Counties Chemical and Pharmaceutical Association, on Friday evening, Feb. 27, at 24, Quadrant Chambers, Birmingham, Mr. George Dymond, President, in the chair, Mr. Wentworth L. Scott, F.C.S., etc., read a paper on "Disinfectants; their Preparation and Properties." The lecturer observed that in disinfecting we are called upon "to destroy, devitalize, or mask the activity of a number of intangible, infinitesimally minute ferment-germs, existing or lying dormant upon the surfaces, or in the interstices of solid bodies, or suspended in air or water, which may, at any moment, if introduced either by accident or design, within the animal economy, develop into more active growth, and thus induce the several diseases of which they are the peculiar *virus*."

These disease-germs, or *zymogens*, as Mr. Scott proposes to call them, may be neutralized in several ways:—"We may decompose, oxidize, burn up, or in the vulgar sense 'destroy,' the entire bulk of the organic substance, which is supposed to hold, or be 'infected' by these germs: we can envelope, cover, or imprison them in such a manner that they are no longer liable to be diffused, or to be communicated or transferred from their position; we may destroy the *life* of, or *devitalize* the germs (in the same manner that ordinary eggs or seed may be killed) by exposure to a high temperature, or by poison; or we may temporarily paralyze their vitality by various means pending their gradual metamorphosis under natural influences into other and less baneful forms."

Mr. Scott divides disinfectants generally, or *Antizymes*, into "two great orders, viz.: *Annectiles*, which simply ensnare or destroy those germs of disease, or *Zymogens*, which chance to come, or are brought into contact with them, and the *Prædactiles*, or those which, as it were, go in search of, or hunt out their infinitely minute aërial prey for themselves. To employ a homely simile, we may get rid of rats, mice, and other vermin, the origin of many domestic fermentations! by the *annectile* trap (if the little animals will only walk into it), or by means of the *prædactile* cat, or ratterrier."

Amongst the more prominent annectile disinfectants described by Mr. Scott were common earth, charcoal, cellulose, and other absorbents; the various metallic oxides in their several combinations, etc. The peculiar attraction many of these—especially the sesquioxides of iron and aluminium—possess for colloidal and other organic matter was well shown experimentally by adding to some decoction of logwood a little solution of sulphate of alumina—the "Cake Alum" so largely produced by Messrs. John Bethell and Co.—or some of the now well-known "Chloralum," the chloride of the same base. On precipitating the alumina, by the addition of a little alkali and filtering, the liquid was obtained quite clear, and free from colour. In this manner the action of the various precipitants that have been employed or proposed for the purification of sewage, etc., was demonstrated and described, as also was similar action of various mordants used by dyers.

The differences in the action and application of reducing or deoxidising, and of oxidizing disinfectants were duly noticed, Condy's fluid, the manganates and permanganates, and the combination of chromic acid being amongst the latter. Here, we are told that "as a means of disinfecting water for culinary, or other domestic purposes, the permanganate of potassium stands unrivalled wherever the costliness of the reägent is not a bar to its use."

Dr. Dougall's opinions anent chromic acid, Mr. Scott is at variance with, and he promises some further information on this point elsewhere.

All the annectile disinfectants, however, are utterly incapable of purifying the *air* (although they are extremely useful in relation to solids and fluids and any surfaces that can be brought into actual contact with them), for whether exposed in pans, saucers, and similar utensils or "pulverized" by one or other of the "spray-producers," with which we are all familiar, it is but an inconsiderable fraction of air that can thus be acted upon and denuded of its zymogens.

The prœdactiles, on the other hand, perform the office of air-purifiers with great rapidity and completeness; the "oxidizing" section of these including chlorine, bromine, iodine, the acids of nitrogen, peroxide of hydrogen, ozone, iodoform, etc.; the reducing class comprises sulphurous acid and its compounds and preparations, such as Medlock and Bailey's bisulphite of lime, sulphurous acid in alcohol, glycerine, and collodion, various alcohols, ethers and hydrocarbons, etc., etc. Lastly, the peracids were fully described, and their action as "paralyzing antizymes" explained, while the absurdity—now too common—of employing simultaneously two or more quite incompatible disinfectants was referred to, and illustrated by several amusing anecdotes.

The author's original researches on the powers of various disinfectants in destroying the *virus* of small-pox, vaccine, etc., were briefly noted, and the apparatus required for the same exhibited to the meeting. He acknowledged the kind assistance received from Dr. A. E. Sansom, Burdon Sanderson, of London, F. C. Calvert, of Manchester, and C. H. Gibbons, of Wolverhampton.

In the last-named town, the spurious and utterly worthless "disinfectants" employed by the authorities were severely commented upon, and samples exhibited, and nearly all the points treated upon were exhaustively explained and illustrated with specimens and experiments.

After some questions had been asked by the President and Mr. Churchill, a cordial vote of thanks was proposed and passed with acclamation to Mr. Wentworth Scott, for his very interesting and elaborate paper.

THE MANUFACTURE OF ALUM, AND ITS APPLICATIONS.

Abstract of a Paper by Mr. T. Williams, *read before the Liverpool Chemists' Association.*

On turning to the earliest history of alum, we learn of it already in use for about the same purposes as those to which it is applied in our times. The name alum was probably given by the Egyptians, in whose land it was abundantly obtained. Early history does not, however, confine the production of alum to Egypt, but enumerates also Spain, Armenia, Macedonia, Pontus, Africa, the islands Sardinia, Melos, Lipari, &c. All of these were sources of native alum. The exquisite means with which they ascertained its quality, was by pomegranate juice, whose principle is still supplied to us in tincture of galls, and can be applied to the detection of an exceedingly minute quantity of iron. But it is seldom if ever we meet with alum which does not strike the dark colour with their test;* still, they possibly made with it comparative experiments, or more frequently were obliged to establish its quality through its actual application to the dyes, with several sorts of which it is said that so small an amount as $\frac{5}{1000}$ part of ferrous sulphate, which would equal $\frac{1}{1000}$ part of iron, causes a marked difference in their brightness. Native alum occurred, effloresced mostly, on the earth's surface; and with careful management, the upper layer was obtained white and of fine quality, and used for bright colours. But some was contaminated to such an extent with iron sulphate, etc., as to be called, by the ancients, "black alum," and that they used as mordant, etc., for dyeing dark colours. Whether native iron alum has been proved to exist or not, I know not; but we have accounts of it being at the present time artificially made for those same purposes. The oriental lands above named were able to raise a large supply of alum, whereof the Genoese merchants, and other trading people of Italy, first exported it to Western Europe and Turkey for the dyers of red-cloth, in which business the Turks were pre-eminent by their famous Turkey-red. The first alum works of any note, of which we have any account in history, were those of Rocha, in Syria, whence the ancient name of "Roch Alum." About the middle of the fifteenth century, a Genoese merchant, who had been to Syria, discovered alum stone in the island of Ischia; on burning which he obtained good results, and established the first manufacture in Europe. Simultaneously another gentleman, who had learnt alum-making near Constantinople, commenced a manufacture at Tolfa. Upon, the announcement of these discoveries to the Pope, he prohibited any further importation of oriental produce, and did his utmost to prevent the manufacture from being extended anywhere but in his own dominion. But for all that, it very soon after started near Carthagena, and also in Germany, about the middle of the sixteenth century. Since then several other countries have carried on this manufacture. In the year 1600, Sir Thomas Chaloner, son of Queen Elizabeth's minister of that name, discovered that his own estate of Guisborough, in Yorkshire, could yield alum, and this it has done to the present time. Other sources in that district were opened, and are now producing that which is well known as Whitby alum. Works were then built at Hurlett, in Scotland, which are also doing a good manufacture. Much later on, alum making was started in Manchester; and now the Pendleton Alum Works, carried on by Mr. Peter Spence, turns out full 250 tons per week. Now, placing our museum specimen of native alum side by side with this magnificent artificial piece, it shows such an enormous contrast in appearance (although both are of the same composition), that one would hardly believe how easy it is to purify and convert it to this form. The process is, simply to dissolve in water, keeping the solution hot during subsidence of anything insoluble; the clear liquid is then drawn off into another vessel to cool, when the pure alum crystallises out, and foreign salts remain in the solution, which is drawn off from the crystals, or the latter may be fished out and placed aside to drain. The mode first adopted, upon the discovery of alum at Tolfa, to obtain the chemical, was by burning it in kilns, somewhat resembling ordinary lime-kilns. In this operation great care was necessary to avoid the temperature reaching too high a point. After the proper calcination, the material would simply be dehydrated. In this state, the burnt mass was piled in heaps about a yard high, exposed to the weather, and sprinkled freely with water, to keep it in a moist condition. The alum only thus re-absorbed its water, and the mass became disintegrated, and ultimately settled into a pasty state. This was lixiviated with warm water, and left to settle in a large cistern. The clear supernatant liquor was then drawn off and concentrated. The crystals obtained were dissolved, and done over again, when it was a finished marketable product, and widely known as Roman alum. This alum was always appreciated for its purity; analysis showing that it contained but the minute amount of $\frac{1}{2200}$ of ferrous sulphate, whilst in other productions it reached $\frac{1}{1000}$.

Long after this a more economical process was discovered, and instead of separating alum from aluminium hydrate and discarding the latter as waste, the burnt mass was acted upon directly by sulphuric acid; thereby the hydrate was converted into sulphate of alumina. To this was added the alkaline salt, potassium sulphate, to the necessary amount. The lixiviation and other parts of the process were conducted as before, but with enormously augmented produce. We have here a specimen of what is called schist or alum slate, and also a specimen of another variety of the same mineral. The distinguishing names given them are: for the first, "cannon," for the second, glossy alum slate. These are very nearly alike in composition, but differ somewhat in appearance. This mineral is found in various places on the continent, also in Scotland and North of England. The specimens shown are from Hurlett Pit, Glasgow. They consist of bitumen, pyrites, and clay—(which is chiefly alumina and silica)—in variable proportions. The processes at Hurlett are, 1st, the roasting; this is performed by placing the rock broken into small pieces upon a horizontal bed of fuel, coal or brushwood. When this has reached a yard high or more, the fuel is set fire to in various places; and when it has fairly kindled, more rock is placed on top, until it is several feet high. The area is expanded at will to an unlimited extent, but it is advantageous not to build very high, as too great elevation of heat occasions a loss of sulphur. The sprinkling of water is not needed in this case, unless the season is very dry. The changes which this mineral undergoes are: the bitumen is of course consumed, and the mass thereby becomes porous, which is of great advantage in the process; by the heat developed the pyrites lose half their sulphur, by sublimation and oxidation to sulphurous acid, and black sulphide of iron results, which, in turn, takes up oxygen with avidity and changes to sulphate of iron; this again yields its acid to the clay, and the iron is peroxidised. According to the size of the heap, chiefly depends the amount of time for this operation; sometimes it is over in few weeks, but before it is touched it requires a long time to cool. The complete decomposition is variously ascertained by the amount of effloresced salt upon the stones, or by taking an average sample of the whole mass, which by lixiviating determines the yield of alum with solution of potassium sulphate; when cold the heap is brought to the second process. Lixiviation is best performed in stone cisterns; the object being to exhaust the mass of its soluble salts, the stronger this aqueous solution the less amount of work there will be for the succeeding operation. The third process, evaporation of the schist lixivium, is conducted in leaden pans of various dimensions, sloping towards the syphon end. The concentration is often carried on by fire made to traverse its surface; when the liquid attains a fixed specific gravity, it is syphoned into a settling cistern of stone or lead, where it deposits insoluble matters. The supernatant liquor is then run into a precipitating cistern, and sometimes further concentrated until upon cooling the large quantity of foreign salts, iron and magnesium sulphates chiefly, crystallise out, leaving the aluminium sulphate in solution. This is precipitated with strong solution of potassium chloride; the sulphate would serve the same purpose, but its use is not so advantageous as the chloride. The potassium chloride and iron sulphate are mutually decomposed, and form potassium sulphate and iron chloride; the former combines with the aluminium sulphate, and the double sulphate-alum falls to the bottom in a state of powder or fine crystals, whilst the iron chloride, having much less tendency than the sulphate to crystallise, remains in solution. This precipitation of the alum constitutes the fourth process. The fifth process, washing the alum powder, is simply done by running cold water upon it into the precipitating cistern, out of which the ferruginous mother liquor has been previously syphoned as completely as possible. The powder is stirred in the water, left at rest, and the water syphoned off. This operation repeated but twice, if well done, leaves the alum tolerably pure, and it is then removed to other lead pans for dissolving in boiling water; this saturated hot solution is run into casks measuring about five feet high by three feet wide, and made of strong staves held together by strong iron hoops, which are arranged by screws, so that they can be taken asunder when the alum has crystallised out, which occurs after about nine days. When the staves are removed, the alum externally has solidified to the shape of the cask; but within the mass some fluid still remains, and it is tapped at the bottom with a pickaxe and the mass broken down, when large crystals are found hanging from the top and projecting from the sides; the dissolving of the washed alum powder and the crystallisation is the sixth and finishing process. This plan was almost universal when alum slate was adopted. But when we consider that this mineral had generally to be mined for, and that from 60 to 130 tons of it were requisite to produce one ton of alum when calcined, it was evidently a slow and costly process.

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* Upon applying this test to a great number of potash and ammonia alums, I invariably obtained the dark colouration in exceedingly dilute solutions. But believing it due only to the minute quantity of adhering mother liquor (which is always highly ferruginous), I washed several lots slightly with cold water. Afterwards not the slightest colouration took place neither with potassium ferrocyanide nor tinct. galls, when left several hours standing and strong solutions.

The most improved method of alum-making is that known as Spence's process, in which manner about ¾ of the total production of the United Kingdom is manufactured. The International Exhibition of 1862 awarded to this the prize medal, "For the successful manufacture of alum from ordinary and previously waste coal shale by dissolving out alumina with sulphuric acid." Here is a specimen of the shale; and, curious to say, not more than ¾ of a ton of this is necessary to produce one ton of alum. This shale is found underlying the seams of coal, and is obtained from the mines of South Lancashire. It holds from 5 to 10 per cent. of bitumen, which gives it a black colour. The first operation here also is the calcination of the shale, which is conducted as before described, with like precautions in the regulation of the heat. But the object of roasting, in this case, is simply to render the alumina soluble in the acid. After calcination, the mass is quite porous. In this state it is brought to a large covered leaden pan and digested, about 20 tons at a time, with sulphuric acid of 1·35 specific gravity for 30 to 40 hours at a temperature of 110° C. The heat is supplied by steam of 100° C., which is conducted from steam boilers wherein the ammoniacal liquor is placed. There are five or more of these boilers, so arranged that the contents of one may flow to the next below. The uppermost is furnished with a supply pipe, which is connected with the large reservoir containing the gas liquor, and has also an exit pipe. The lowermost of the series has a pipe through which high-pressure steam is conveyed into the gas liquor contained in the boiler, which soon raises it to boiling. The ammoniacal and water vapours are now conducted by a pipe into the boiler and placed next above it, which is also thereby quickly made to boil, and the vapours out of this are similarly conducted to the next above, and so on through the series; and out of the uppermost boiler's exit pipe it is conveyed in a very concentrated state into the pan where the shale is digested. This pan supplies the ammoniacal vapour with acid, and the ammonia is converted into sulphate. This abstracts the aluminium sulphate out of the shale, and a highly concentrated solution of alum is obtained. This alum liquor is run off into cisterns, and kept continually agitated (by machinery) while it cools, to promote the formation of small crystals. These crystals are then washed with the mother liquor which runs from the blocks of finished alum, when they are tapped at the bottom after removal of the staves of the casks or tubs. Out of this liquor, which is highly ferruginous, the small crystals are almost pure, and are removed to what is called "Roching process," which is simply their re-dissolving in a hopper at the bottom of which they come in contact with steam, which effects that object with rapidity; the supply of each is so arranged that while the alum is dissolved, the steam is completely condensed. By this means four tons of alum are dissolved in from 30 to 45 minutes. Out of this hopper it runs into a leaden tank, and deposits insoluble matters. After three hours it is brought along moveable channels into the tubs already described. We observed that in early times potash was the alkaline ingredient almost exclusively used; but in consequence of the continually increasing demand for that salt in agriculture, etc., it was substituted by ammonia, which is conveniently obtained from waste. Ammonia alum has been found in nature, and was manufactured in small quantities artificially as far back as the 16th century. It is quite immaterial which salt is used; the alum in both cases answers the same purpose, nor is it necessary for its objects that it should contain any secondary salt, for it is the aluminium sulphate that performs the work. But it would be difficult, if not impossible practically, to obtain it separate from the extraneous matters that are associated with it in the processes described. The alkaline salts have the peculiar power to abstract the aluminium sulphate in the first place; and thus combined, the double salt crystallises readily. These advantages always more than compensate the outlay of alkaline salt. When, however, purer mineral is used, salt is unnecessary, and the aluminium sulphate is sent as such to the market, and is often called "concentrated alum" and used instead of alum. There are several manufacturers of this article. Mr. Pochin, at Salford, prepares these by acting upon china clay (which can be obtained free from iron, but holds of course, a large amount of sand) with sulphuric acid. There is another variety of alum, which has been discovered native, composed of the double sulphate of aluminium and sodium. And whilst much profit would follow its production with this abundant and cheaper alkali, there are great disadvantages in its manufacture, attending its crystallisation chiefly, which has so far hindered its way to the market. But this matter has recently been very closely investigated by J. Berger Spence (*vide* Report of British Association for Advancement of Science, Liverpool meeting, 1870). Now the difficulty is overcome, it remains merely a question of time to supplant the other salts almost totally. Here we have fine specimens of the three varieties spoken of—potassium, ammonium, and sodium alums. The three are crystallised in colourless transparent octahedrons, and under common circumstances they always do appear in this form from their solutions. The Roman alum (potash), prepared as described above, was on the contrary invariably crystallised in opaque cubes; which peculiarity was supposed to be due to its containing a small excess of earth. Dissolved in cold water and allowed to crystallise slowly, the cubical form was still retained, but from a hot solution the octahedron crystals appeared upon cooling. Upon the whole, it may be said, that all alums crystallise in the octahedron, for they do when the circumstances are similar.

To prove the constituents of alum, we place, say 100 grains mixed with quicklime in a test tube, and apply heat; the volatile alkali is found free by its smell, and turning the red litmus paper blue. In this manner, we could liberate all the ammonia, and collecting it, it would weight 3·75 grains. Dissolving another 100 grains in 2,000 of water, pouring this into dilute solution of ammonia, the bulky precipitate formed is collected in a filter, and if calcined it would consist of pure alumina, and weigh 11·34 grains. The filtrate of this, we acidify with hydrochloric acid, and to it add solution of barium chloride until it ceases to give (white) precipitate. This again, being ignited, should yield 35·29 grains of sulphuric acid, *plus* the weight of barium used. We take 100 grains again, heat it not to exceed 205° C., and now it melts in its water of crystallisation, the smaller steam bubbles in which form will eventually harden and become permanent after nearly all the water is expelled, and we shall have made alumen exsiccatum a spongy-looking mass, exceeding in bulk the alum powder used; but 45·485 grains less in weight, occasioned by loss of water. That is, 11 molecules of water have escaped, and to drive away the 12th and last molecule (4·135 grains) the heat must be increased until it is full red, and then besides, all the acid will be expelled, and pure alumina would remain.

It may be said that no marketable alum nowadays is so impure as to require testing quantitatively or otherwise, except when large purchases are made, and then it is merely to determine the moisture which it takes from being in a damp situation. Out of a great number of commercial samples tested with that object, moisture was found from 2.97° to 6.87°. And qualitative examination of trade samples from several sources (ammonia alum) gave in each instance potash and soda in small quantities, which are derived from the shale and are nowise objectionable, and a minute portion of iron (superficially), which can be removed by washing, as above described. I omitted to remark that when the alum blocks are obtained at the crystallising tubs, they are cut to pieces of about one foot cubes, removed to the stores, and piled in heaps to dry, when a large supply is ground very fine, and sifted by steam power. In the market it is bought at about 65s. per ton for the loose lumps, and the powder brings nearly 20s. more per ton.

In a moderately dry atmosphere alum is unaltered. For almost all purposes it is dissolved in water for use; its solution is effected with eighteen parts of that menstruum at 15.5° C., and in equal proportions by weight with boiling water. The application of alum in dyeing depends upon a peculiar affinity of alumina for colouring principles, all of which are of vegetable origin, except cochineal. If to a decoction of dyewood or cochineal, a solution of alum be introduced, and potash added to precipitate the alumina, the colouring matter is simultaneously seized by the earth, and the combination, which is called lake, collects at the bottom of the vessel. The liquid is syphoned off, and clean water is used to wash the lake, which is finished after it gets dry. It is afterwards frequently mixed with water and gum, and formed into cakes.

Besides this affinity for colouring matters, alumina has a powerful attraction for vegetable fibres of cotton, wool, &c., which property makes it valuable as a mordant, in which capacity it holds the colour most intimately to the fibre.

Another use of alum is for paper-making, for this purpose it is very largely used in size, which is composed of ground alum and oil. Alum is also an astringent medicine. It has a somewhat sub-acid taste, and causes a peculiar sensation of dryness of the mouth and throat; its effects upon the system are described to be an immediate corrugation of the fibres and contraction of the small vessels; it checks the secretion of the alimentary canal, producing constipation; in large doses it produces nausea, vomiting, and purging. The Pharmacopœial preparation is alumen exsiccatum, which is nothing different in chemical properties, but of nearly double the strength of the raw crystals. This salt is also a very convenient source for obtaining alumina, either by precipitating with ammonia or calcination. Among its many other interesting applications, its extensive use in bread-making affords a profitable subject of investigation and discussion.

Medical Gleanings.

THE meeting of the General Medical Council at the beginning of this month was looked forward to with considerable interest by members of the profession, in consequence of the importance of the chief subject of the programme set for discussion. In July last the Council issued an edict to the nineteen examining bodies of the United Kingdom recommending them to consult together and bring forward schemes for Conjoint Examining Boards, one each for England, Scotland, and Ireland. These schemes were to be ready by the beginning of 1872, and were to be submitted to the Medical Council for approval.

It may not be out of place to explain that in the three divisions of the United Kingdom there are in all nineteen different bodies, each empowered to conduct examinations and grant degrees, and each being represented on the Medical Council. The degree of either corporation entitles the possessor to registration as a medical practitioner; but it is of course evident that among so many varying institutions, the accepted standard must needs vary also, and it has been deemed desirable that in each country there should be one, and only one portal to registration, leaving the various bodies to educate as they now do. The theory of this proposal is very specious, but there is much to be said against it; and practically there are such difficulties in the way, that in spite of the imperious demands of the Medical Council, the subject will probably remain open for some years as it has been and still is. Matters stand at present in this position. In England the Colleges of Physicians and Surgeons and the Society of Apothecaries united to endeavour to draw up a scheme which should be satisfactory to all of them, but at the first attempt the College of Surgeons refused to run. A second effort was made, and this time the Royal Colleges planned it between themselves, and drew up a scheme which it was impossible for the Society of Apothecaries to accept. The latter body submitted certain legal objections; but the colleges chose to ignore the society altogether, and went on with their scheme. The universities of Oxford, Cambridge, and Durham have expressed their approval of the conjoint scheme thus drawn up, and the London University would like to do so, but sees some legal difficulties in the way. The universities cannot be said to have joined in the scheme fully, for at present they merely express approval, which is satisfactory only so far as it goes. In simple fact the scheme is at present nothing more than such a one as is already in existence between the similar colleges at Glasgow, though it may become a much larger one. But it certainly can never succeed fully unless the Society of Apothecaries can be included; unless, indeed, we suppose the other alternative of sweeping away that society, a consummation which some members of the Medical Council confessed, "with a pang," they regarded as probable. But those sympathetic gentlemen should reserve their "pangs" until a power above the Medical Council has resolved to abolish the society, which sends forth throughout the country, perhaps the most useful, although not always the most aristocratic members of the profession—men who are seldom named in the medical papers, who aim not after medical peerages, but who do manly and generous work all their lives with only slight reward. The House of Commons will not summarily suppress an important branch of the medical profession, just to gratify the whims of the nabobs thereof. Medical bills always excite suspicion, and command scrutiny in the House; and with reason.

Stunted as it was, however, the Medical Council was fain to accept this scheme in default of a more comprehensive one, and resolutions were passed signifying the council's approval and sanction. But Scotland and Ireland came forward with no definite scheme to offer, and although there seems to be a fairly general approval of the design on the part of the corporations themselves, yet it still appears almost certain that in the end the *esprit de corps* of the various institutions will be too strong for the logical submission of each to a common central authority; a conclusion of the matter which we cannot but hope for, believing as we do with Sir Robert Christison that the establishment of these central examining boards, in addition to many other dangers, would "tend to take away from our existing universities and corporations that self-reliance, emulation, and enterprise which are the result of such being allowed to teach, and to examine according to its own constitution, and the "*genius loci*," and which are of precious value to the interests of education." Neither is it very clear, beyond the merely sentimental approval of uniformity which lingers in many minds, what advantage the one-portal system would bestow on the community to compensate for the deadening influence of a levelling machine.

In the discussions which took place in the Council respecting the non-compliance of our sister-kingdoms with the order which had been issued, some national blood was set to boil a little. Dr. Andrew Wood, who represents the College of Surgeons of Edinburgh, insisted, with true Caledonian pride, that in the attempt to form a scheme the Scottish bodies could not be said to have failed,—it could only be said that they had not yet succeeded. Dr. Alexander Wood and Dr. Allen Thompson, who represent respectively the College of Physicians, Edinburgh, and Glasgow and St. Andrew's Universities combined, had a smart set-to over an an expression used by the former to the effect that the University of Glasgow was trying to become rich by degrees, possibly intended as a pun. Dr. Thompson, however, did not see the beauty of the joke, and characterised the statement as containing "no truth whatever." Naturally this evoked a little Coleridge-Ballantine scene. But Dr. Parkes, who is one of the Privy Council nominees in the Council, threw fat in the fire most recklessly by advising that a scheme should be formed *for* Scotland, if one was not provided *by* Scotland. He was sharply informed by Dr. Andrew Wood that Scotland would not be dragooned into taking action. Scotland would judge for itself what was right, and, whilst it would be convinced by reason and argument, it would never yield to a pistol presented at its head. The assailant was also reminded of the national emblem and motto—*nemo me impune lacessit*. The same gentleman also awoke the humorous pugnacity of the eminent representative of Queen's University, Ireland, Sir Dominic Corrigan, who remarked that "Dr. Parkes had insisted on decisive steps being taken. He had proposed decisive steps once before in the case of the Queen's University, but the Queen's University quietly held up its hands, and said to Dr. Parkes, in the words of Shakespeare, 'Come on.' Did he ever come on? He did not. Let him, then, take decisive steps—such as those he took against the Queen's University." Ultimately it was decided to give another six months each for Scotland and Ireland to prepare their schemes. We agree with the *Lancet*, though with a different signification, in expressing regret at the multiplication of meetings for purposes which never seem to come near realisation. The *Medical Times*, observing the hearty approval which the Scotch and Irish representatives bestowed on the English scheme, shrewdly suggests that they might be suspected of feeling no great repugnance towards a scheme, the imperfections of which might possibly cause an increased demand for their diplomas; and while neither presented a scheme for the formation of a Conjoint Board in their divisions of the kingdom, they were perhaps nothing loth to see the plan tried in our division, feeling probably some curiosity as to how it would work, and not unmindful of the axiom "*Fiat experimentum in corpore vili.*"

Dr. Bayes, in the *Homœopathic World*, states by authority, his information coming from a source "whence no error is possible," that of about 500 remedies urged on the physicians in attendance on the Prince of Wales, as infallible cures, not one was employed, and that *Baptisia Tinctoria* was not administered to the Prince. It has been frequently reported that His Royal Highness was cured by this homœopathic remedy when all others had failed. This, then, is not true, and homœopathy must wait a little longer for an opportunity of snatching such a laurel wreath as it was fondly hoped this Baptisia Tinctoria had woven. With regard to the 500 who charged down upon the Prince's physicians with their infallible cures, Dr. Bayes is reminded of the French general who, when he saw the charge of our 600 at Balaclava, exclaimed, *C'est magnifique, mais ce n'est pas la guerre!* or as Mrs. Brown says to Mrs. Trimley, "it shows a kind 'art, but in my opinion a weak 'ead."

In a recent issue of the *Lancet* we find a narrative of the public career of one of the most curious impostors of the many who, from time to time, have managed to swindle the long-suffering medical profession. This interesting individual possesses a combination of talents, any one of which would have raised him to eminence in any ordinary pursuit, but each one of which he has prostituted to the accomplishment of the most ridiculously absurd purposes. The fable of the fairy who added a curse to every gift, which Macaulay applied to Byron, is singularly applicable in this case. Audacity, ingenuity, and heroic patience, are manifested in every stage of his career; while all his virtues are at the same time linked together and cursed, by the apparently inherent vice of dishonesty.

The scenes of his impositions have been the metropolitan hospitals. Like Nelson, he sails straight into the midst of the foe, and invariably hitherto the foe has let him pass through uncaptured. He has certainly sojourned twice at St. Bartholomew's, twice at University, and once each at Middlesex, St. George's, Charing Cross, and St. Bartholomew's at Chatham. How he has filled up the balance of his time is not stated, but it is likely that his wits are not often at rest. This is the style in which he goes to work:—At one time he is Dr. Leake, a near relative of Marshall Hall. Fell from his horse some years ago, and is now subject to fits. Has had one in the street, and with the assistance of two men he staggers to the hospital. Another time he is Dr. Leach, and the same story does again. On a third occasion he is Edward Masson. Fell down on his way from his house in Camden Town, and, with the help of a policeman, drags himself to an hospital where complete symptoms of paralysis gradually come on. Several times he appears as Edward Smith. Edward is an engineer from Newcastle, who had come to London to attend some meetings concerning a strike; he has been unfortunately taken with a fit in the street. He also appears on different occasions as Edward Mason, M.D., of Giessen, and Dr. Smith, of the Indian Army. Settled in the hospital, paralysis comes on attended with tetanic convulsions of the opposite side, both of which diseases he simulates with marvellous accuracy. His case has always excited the greatest interest both in professors and students; and the notes have always been taken with that care and voluminousness which the rarity of the case demanded. On one occasion he formed the subject of a short clinical lecture on "Arachnoid Hæmorrhage;" and more than once he has been attended all night by a diligent student, who carefully recorded all the attacks of spasm, etc. The variety of treatment to which he has been subjected is remarkable. Opium and morphia have been put into the stomach, up the rectum, and beneath the skin. Calabar bean, belladonna, bromide of potassium, iodide of potassium, chloroform, and the hydrate of chloral have all been administered in enormous quantities. Ice-bags have been applied to the spine and head, and in two hospitals the ether spray was made use of to cool his back. This seemed to check his spasms very effectually; so we may conclude that the process was painful. On one occasion the ether caught fire, and his back was consequently slightly singed. The accident was followed by a marked improvement.

His condition being usually one that required "keeping up," his supply of stimulants was liberal, and it is recorded that at one hospital he consumed 234 ounces of brandy or whiskey during his fourteen days' stay; while at another a special messenger was despatched on one occasion to Birch's, Cornhill, for some of the very best mock-turtle soup that money could procure. This last instance was when he was Dr. Smith, of the Indian Army. The rascal fell really ill at this hospital, but even in view of death his ruling passion and his sense of humour did not fail him. He made his will. It was carefully sealed and docketed in true official manner "Dr. Smith's Will." He appointed the Council-board of India to be his executors, and expressed a hope that "in consideration of his long and faithful services in India" the said Board would have an eye to the welfare of his son and three daughters who were left to deplore their father's loss. His family being provided for, he next thought of the institution where he had received so much benefit, and left twenty-five guineas to the physician's assistant who had had charge of him "to purchase a ring or other memorial," and £150 to the hospital; the said legacy to be "free of legacy duty, and to be paid out of such part of my personal estate as by law can be appropriated for charitable purposes."

Suspicion has generally been awakened after a time, on the approach of which the gentleman has generally discharged himself promptly, sometimes dragging his palsied leg behind him, until he has reached the first corner. With characteristic wit and audacity, the same fellow, describing himself as Edward Jeake, a chemist, obtained a charitable contribution by false pretences from the Westminster Committee for Organising Charitable Relief and Repressing Mendicity. This time, though, he sailed too close, for he was afterwards caught, and tried by Mr. Knox, who, failing to appreciate the humour, sent Mr. Jeake to prison for three months with hard labour. He is described as a stout, good-looking, short-necked man, reminding one rather forcibly of the pictures of Henry VIII. His hair is dark-brown, short, and curly; and he has the scar of a carbuncle in the cervico-dorsal region of his back. Age about forty-three. He is well educated, and has some knowledge of Latin and Greek, as well as of modern languages.

CHEMICAL SOCIETY.

PROCEEDINGS of the Chemical Society, Thursday, February 15, 1872.

Dr. FRANKLAND, F.R.S., President, in the chair.

After the ordinary business of the Society had been transacted, Professor Roscoe, F.R.S., gave an account of some of his recent researches on the element tungsten, under the title, "On the Study of some Tungsten Compounds." The author, after giving a short *résumé* of the labours of other chemists on those compounds of tungsten which he had been investigating, proceeded to describe their properties, and the methods of preparation he had employed to obtain them. As the result of his labours, he has definitely settled that the metal tungsten is a hexad element, with the atomic weight 184, and has also showed the cause of the error of the French chemist, Persoz, who assigned 153 as the atomic weight. A collection of very fine specimens of tungsten compounds was exhibited by the professor. The meeting subsequently adjourned until Thursday, 7th of March, when Dr. Debus will read a paper "On the reduction of Ethyl Oxalate by Sodium Amalgam."

Thursday, 7th March, 1872.

Professor WILLIAMSON, F.R.S., Vice-President, in the chair.

In the course of the ordinary business of the Society, the proposed changes in the officers and Council of the Society for the ensuing year were announced. Dr. Debus, F.R.S., then read a paper "On the Reduction of Ethylic Oxalate by Sodium Amalgam." In 1864 Dr. Friedlander described, as the result of this reaction, the production of the sodium salt of a new acid, which he named glycolinic acid. Although the author has carefully repeated Dr. Friedlander's experiments, and varied the details of the process in different ways, he has been unable to obtain glycolinic acid—the only acids formed being glycollic and tartaric. A comparison of the crystalline form of a specimen of sodium glycolinate, prepared by Friedlander, with that of sodium glycollate, would seem to indicate that it is identical with the latter. Two other papers were also read—one "On Metastannic Acid, and the Detection and Estimation of Tin," by A. H. Allen, F.C.S.; and the other "Note on the quantity of Cæsium contained in the Water of the Hot-springs found in Wheal Clifford," by Colonel Philip Yorke, F.R.S., from which it appears that a gallon of this water contains twenty-six grains of lithium chloride, and in one million parts 1·7 of cæsium chloride, or more than ten times as much of the latter as the Dürkheim water, in which, it will be remembered, that element was first detected by Kirchoff and Bunsen, in 1860.

IPECACUANHA.

DR. DYCE DUCKWORTH, Assistant Physician to St. Bartholomew's Hospital, read a valuable paper before the Pharmaceutical Society on March 6th, in which he presented some considerations as to the therapeutical value of the preparations of this drug. The following is the paper:*—

I have been engaged at intervals for the last three years in studying the physiological and therapeutical actions of ipecacuanha, and consequently have had occasion to employ both the officinal and other preparations of this drug. I have likewise made use of its true alkaloid, emetia, as prepared by Messrs. Hopkin and Williams.

The object of my communication is to call attention generally to the pharmaceutical preparations of ipecacuanha in the British Pharmacopœia, but most especially to the importance of securing better fluid preparations of the drug than we at present possess.

As to the ordinary powder of the rhizome, I think no remark is called for. I am informed that this is generally to be obtained in the shops void of adulteration, and, provided that the rhizome is of good quality, and is a genuine specimen of ipecacuanha, there is hardly an objection to be made to it. The most probable adulteration is with the rhizomes of *Psychotria emetica*, a striated variety, called Peruvian ipecacuanha. This plant is less rich in emetia, and contains rarely more than 6 per cent., while the best rhizomes of true ipecacuanha yield 10½ per cent. of the true alkaloid. Dr. Attfield has recently made some assays of different specimen and in particular of a variety of *Psychotria* which was sent from Bogota, and which he found to contain only 2½ per cent. of emetia, with great excess of grape sugar. He rightly urges that no more of this latter quality should be imported into Europe.

It is important to select such rhizomes as are not too broad, for it is found that the bulk of such specimens is mainly due to the central woody matter which is devoid of emetia, and therefore worthless.

Ipecacuanha enters into the following officinal preparations:—Pulv. ipec. co., or Dover's powder; pil. conii co.; pil. ipec. c. scillâ; trochisci ipecac.; trochisci morphiæ et ipecac.; and the vinum ipecacuanhæ.

I believe all these preparations are excellent. I would especially instance the great value of the Dover's powder and the pil. ipecac. c. scillâ. It is when we consider the only fluid preparation in the list that we have reason to be dissatisfied. It is somewhat remarkable that no other solutions of ipecacuanha have been enjoined in the British Pharmacopœia; in most of the foreign dispensatorics there are several formulæ for syrups, liquid extracts, or tinctures.

It is not, however, important to enumerate either the names or the peculiarities of these several preparations, because, with one exception, they cannot be considered satisfactory.

The exception is in favour of the syrup of the United States Pharmacopœia, which is made from an aceto-alcoholic extract of the drug, and this leads me to speak of the best solvents for ipecacuanha.

They are three in number, viz., acetic and tartaric acids and rectified spirit of wine; they dissolve the emetia out of the rhizome, and there are the best reasons for believing that the alkaloid represents the active principle of the remedy.

In the vin. ipecac. the emetia is dissolved in part by the 17 per cent. of alcohol contained in the sherry, and partly also by the acid tartrate of potassium. Ipecacuanha wine, when freshly made, looks eminently satisfactory as a preparation, but it becomes turbid after a time, and deposits a brownish, muddy sediment. The same phenomena ensue when a proof-spirit tincture of the drug is made. (A rectified-spirit tincture, such as is used in homœopathic pharmacy, or rather was formerly enjoined in their codex—for they now employ proof-spirit for many of their tinctures—retains its brightness, and throws down no sediment.) This ugly sediment engaged my attention a good deal at one time, and I examined it with some care. I should add that emetia itself dissolves perfectly in sherry, but with some difficulty, and after a time the solution throws down a similar sediment, though in smaller quantity, to that found in the wine and proof-spirit tincture. Filtration removes the turbidity, but only for a time. I have learnt from many inquiries among pharmacists that some frequently filter the wine, and others dispense the preparation only after shaking up the bottle, and therefore in the turbid state. They have generally seemed ignorant as to the nature of the deposit, though they have believed it to contain some of the active part of the drug.

If some of this matter be examined under the microscope, it will be found to consist of a yellowish, granular, amorphous material. It has been supposed to be glucose or starch, but it is neither the one nor the other. Neither tartaric nor acetic acids have any effect upon it, nor is it dissolved by ether, chloroform, alcohol, or ammonia. The only solvent I have found for it is the liquor potassæ. Hence, I satisfied myself that it was not emetia, for this alkaloid is soluble in acids and alcohol, and only slightly so in ether, while it is insoluble in alkalies. The reaction of the precipitate is acid, and it has a bitter and somewhat aromatic taste. I was indeed at a loss to know what its exact nature was till Dr. Attfield informed me that it is a mixture of the acid tartrate of potassium and cephaelate of emetia. To quote his own words, "The cause of its appearance is, I presume, the slow formation of alcohol from the residual sugar in the sherry, a menstruum being produced in which the tartar is decreasingly soluble. With the tartar is deposited the natural salt of the alkaloid, because the former is the solvent of the latter. A proof-spirit tincture is not more stable than ipecacuanha wine; what is wanted to retain the alkaloidal salt in solution being not alcohol but acids, or such an acid salt as cream of tartar." Dr. Attfield stated to me also that the wine deteriorated gradually in strength according to the amount of deposition, which is exactly what might be expected. I find that the addition of three or four minims of liquor potassæ to a drachm of the muddiest wine or tincture of ipecacuanha renders it quite bright and clear, and of the colour of old port wine. Liq. ammoniæ darkens but does not clarify it. The bitterness and aroma of the sediment are due to the ipecacuanhic or cephaelic acid, which is described by Pelletier as bitter.

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* From the *Pharmaceutical Journal*.

There can, therefore, be no doubt that ipecacuanha wine is an unsatisfactory pharmaceutical preparation; and I hold it to be no rejoinder to this statement if either the physician or the pharmacist aver that they are perfectly satisfied with it as it is. For all practical purposes I believe the vin. ipecac. of the shops is quite efficient, but I maintain that there is a better preparation, and that on all accounts it will be proper to employ it. We have already seen that sherry wine is not the best solvent of this drug, and that other menstrua succeed perfectly in taking up the emetia. In November, 1860, a paper was read before this Society by Mr. George Johnson, a pharmacist of Birmingham, in which he stated that, while seeking some cheap menstruum for the drug, he found from Pereira's work that acetic acid was the best solvent for emetia, and he proceeded to make an acetic solution according to the formula of the London Pharmacopœia of 1851, then in use. Two and a half ounces of the bruised rhizome were macerated in five fluidounces of acetic acid. Thirty-five ounces of water were then added, and the maceration was continued for twenty-four hours longer, with frequent shaking. The solution was then filtered and strongly pressed. A rich brown solution was the result; and Mr. Johnson believed this to be nearly twice as strong as the vinum ipecacuanhæ, because, on testing with tincture of galls, after careful neutralization with ammonia, a precipitate of tannate of emetia was thrown down in much larger quantity than fell from an equal amount of the wine after similar treatment. Moreover, fifteen drops of the preparation sufficed to induce vomiting in young children.

Mr. Johnson very properly claimed for this acetum ipecacuanhæ the merits of pharmaceutic exactness and cheapness, and he urged that it should be introduced into the Pharmacopœia. His plea was, however, unheeded by the committee who superintended that work. Mr. Johnson also recommended a weak alcoholic tincture, which should contain four grains of tartaric acid in the ounce. He proposed that four parts of distilled water should be added to one part of rectified spirit; and this menstruum, with the tartaric acid, he believes, would secure the most stable preparation of ipecacuanha.

I now describe the process recommended in the United States Pharmacopœia for making the syrup of ipecacuanha. A fluid extract is first prepared by means of acetic acid and alcohol, as follows:—

Take of Ipecacuanha in fine powder .	16 troy oz.
Acetic Acid	a fluid oz.
Alcohol,	
Water, each a sufficient quantity.	

Moisten the ipecacuanha with six fluid ounces of alcohol, introduce it into a conical percolator, press it firmly, and pour alcohol upon it until three pints of tincture have slowly passed, or until the ipecacuanha is exhausted. Distil off the alcohol from the tincture by means of a water-bath until a syrupy liquid is left. Mix this with the acetic acid and ten fluid ounces of water, boil the mixture gently until it is reduced to half a pint and the resinous matter has separated. Filter the liquor when cold, and add sufficient water through the filter to make the filtered liquid measure half a pint. Lastly, mix this with half a pint of alcohol.

The process is manifestly very troublesome and expensive. The result is a beautiful rich brown-red preparation, very powerful. Messrs. Dinneford and Company have supplied me with some which they made a year ago, and which appears to retain its full activity unimpaired. The syrup is ordered to be made as follows:—Two fluidounces of the aceto-alcoholic extract are to be mixed with thirty fluidounces of simple syrup. This preparation, as made by Messrs. Dinneford, I have also examined; and it appears to be a very efficient one. There can be no doubt that, excellent as is the American fluid extract, it is too powerful for ordinary employment, and such a preparation could never take the place of the vinum ipecacuanhæ, since it would cease to be a household or domestic remedy.

Not long ago it came to my knowledge that Messrs. Ferris and Company, of Bristol, had for some time been accustomed to prepare and sell largely an acetum ipecacuanhæ and an oxymel ipecacuanhæ. I communicated with Messrs. Ferris, and they were so kind as to send me specimens of their preparations, and their formulæ for the manufacture of them. They state that they consider the acetum a far more stable and reliable preparation than the vinum, and they supply many medical practitioners with it instead of the latter. It is made by macerating half a pound of the bruised rhizome in a gallon of dilute acetic acid for fourteen days. After expression and straining, the preparation is ready for use. It is a bright yellow solution, and throws down no sediment of any kind.

Messrs. Ferris's oxymel is made by mixing one pint of the acetum with two pounds of clarified honey. This must be subsequently evaporated to a proper consistence. The acetum is one-third stronger than the wine; thus twenty minims are equal to half a drachm of the latter. I have employed both of these preparations, and find them excellent and serviceable.

Mr. Carteighe has recommended the following methods for making the acetum and oxymel, which differ somewhat from those employed by Messrs. Ferris. The Pharmacopœial strength of the wine has been maintained both by Messrs. Ferris and Mr. Carteighe, viz., one ounce of the rhizome to a pint of the menstruum.

Take of Ipecacuanha Root (bruised) . .	1 oz.
Acetic Acid	1 oz.
Distilled Water, a sufficiency.	

Macerate the ipecacuanha and acid for twenty-four hours; pack in a percolator, and pour distilled water gradually over it until one pint of percolate has been obtained.

A clear bright brown solution is obtained, which throws down no sediment. It is darker and stronger than Messrs. Ferris's preparation; and the value of the method consists in the primary action of the stronger acetic acid, which more completely exhausts the rhizome.

Mr. Carteighe's method for making the oxymel is as follows:—

Take of Ipecacuanha (bruised)	1 oz.
Acetic Acid	1 oz.
Distilled Water, a sufficiency.	
Clarified Honey	2 pounds.

Macerate the ipecacuanha in the acid for twenty-four hours, pack in a percolator, and pour distilled water gradually over it until ten fluid ounces of percolate have been obtained. Add the product to the honey and mix.

These, then, are the fluid preparations of ipecacuanha which I desire to recommend to the notice of the Pharmaceutical Society.

I believe they are decided improvements upon any hitherto devised, and meet a want long felt by medical men and pharmacists. The processes recommend themselves by their simplicity, the preparations are stable and in all respects satisfactory, while the expense is only about half that entailed by employing sherry wine or spirit, as ordered in most Continental pharmacopœias.

As to the doses of the acetum and oxymel, I have prescribed the former in doses varying from five to fifteen minims, and am quite satisfied with the effects. I secured an emetic action with half an ounce in the case of an adult. The oxymel may be employed in doses of from five minims to half a drachm, and continued or not according to the effect produced. I have elsewhere advised that small doses of ipecacuanha are best given frequently for the so-called expectorant or relaxant effect.

Many medical men prescribe the wine with alkaline remedies, and might hesitate to order an acetum ipecac. in such combination. In either case there is chemical incompatibility; though, as in the case of hyoscyamus and alkalies, practitioners will doubtless express themselves as satisfied clinically with the result. Again, the wine does not mix well with emulsion of almonds, although this is often ordered for children. The oxymel, however, will make a very pleasant and palatable mixture in combination with mistura amygdalæ.

It may be a difficult matter to displace the well-known and reputed ipecacuanha wine from the Pharmacopœia; and, for my part, I am not disposed to urge such a course at present. Were the medical profession to cease to employ it, the public would continue to demand it as a common domestic remedy. If the two preparations I have described, the acetum and the oxymel, be added to the Pharmacopœia, and the vinum be retained for the present, the requirements of chemistry and modern pharmacy will be satisfied, and the physician will be furnished with the best-known fluid forms of the drug; while the public will find in the shops, as heretofore, their old-fashioned remedy unchanged.

We also summarise the points of importance which were alluded to in the discussion that ensued.

Mr. **Hills** said the wines of commerce varied so much that he would suggest whether proof-spirit could not be substituted for them, so that they might have something definite as a menstruum.

Mr. **Hanbury** said the course that Mr. Hills suggested had actually been tried, for in the Pharmacopœia of 1824 wines were abolished. Steel wine, antimonial wine, colchicum wine, and ipecacuanha wine, made with sherry, were all abolished; but he believed the result was a failure, for in the next edition of the Pharmacopœia the wines were restored.

Mr. **Williams** remarked that the preparations before them were made with bruised roots, but he thought bruising the root was rather a disadvantage than otherwise. In making emetia they sliced it into small pieces, and did not allow that starchy matter that would otherwise come out to get into the preparation. He should like to ask Dr. Attfield how he assayed the samples of ipecacuanha, by what test or means he discovered the various strengths and qualities of these roots.

Professor **Attfield** said that to best of his recollection he exhausted the ipecacuanha with alcohol, evaporated to dryness, treated the residue with water and magnesia, evaporated the resulting aqueous solution of the liberated emetia to dryness, and thus obtained a product containing all the emetia, or at all events nothing nitrogenous except emetia, and then estimated the amount of nitrogen in that residue by combustion. Emetia contained nearly 4½ (4·3) per cent. of nitrogen, so that by a simple calculation the proportion of emetia was indicated. He thus obtained results which, in the case of ordinary ipecacuanha, coincided with the results of previous experimenters. In the case of his striated specimen he showed that there could be no more than 2¾ per cent. of alkaloid of any kind, even if impure.

Mr. **Hanbury** referred to the question asked by Mr. Williams as to how the emetine in these roots might be estimated. A few years ago a French chemist, M. Lafort, examined the ipecacuanha of Brazil and new Granada, in order to settle which was the stronger. The plan he adopted was to precipitate the emetine by tannic acid, and to corroborate the results by another series of experiments, in which the alkaloid was thrown down by nitrate of potash. In that way he showed that the ipecacuanha of New Granada was somewhat less rich in alkaloid than that of Brazil. He (Mr. Hanbury) thought Professor Attfield was a little mistaken in saying that ipecacuanha was a variable drug. As imported it was singularly free from adulteration. Now and then a package arrived of what is called *striated ipecacuonha*, or one of the other roots used as ipecacuanha in Brazil; but no druggist was so little experienced or so ignorant that he could be deceived in a sample of ipecacuanha. It possessed characteristics so striking that there was no difficulty in recognizing it, and it never came mixed with other roots.

Professor **Attfield** said he had been told that evening, by a gentleman who dealt very largely in ipecacuanha, that the powder of ipecacuanha was a most variable preparation; because, somehow or other, the varieties which honourable traders would not buy did get purchased, and came into pharmacy in the form of preparations of ipecacuanha.

Professor **Bentley** entirely agreed with Mr. Hanbury with regard to the freedom of ipecacuanha root from adulteration. It was quite true that striated ipecananha was occasionally imported, but as striated and not as true ipecacuanha, just the same as undulated ipecacuanha, which was, however, rarely seen at the present day. If he (Professor Bentley) recollected Professor Attfield's paper rightly, it was an assay not only of the true ipecacuanha, but also of striated ipecacuanha; and he thought that so far as the percentage of the impure emetia of Pelletier was concerned, the observations of Professor Attfield agreed substantially with those of Pelletier. Thus Professor Attfield found 16 or 17, and Pelletier from 11 to 17 per cent. in the ipecacuanha; and with regard to striated ipecacuanha, Pelletier found about 9 per cent. and Professor Attfield about 10. But in the percentage of pure emetia the experiments of Pelletier and Professor Attfield gave very different results, Pelletier only finding about 1 per cent., whereas, if he remembered rightly, Professor Attfield had found as much as 10 per cent. in true ipecacuanha, and nearly 3 per cent. in striated ipecacuanha. Professor Bentley would like to ask Professor Attfield whether he was satisfied that ipecacuanha yielded so large a per-centage of pure emetia.

Professor **Attfield** explained that in the paper alluded to he had simply insisted that, at least, the amount of nitrogen in the aqueous extract of the residue of the tincture of ipecacuanha should be estimated before deciding on the value of a sample of ipecacuanha. He had thus shown that the 16 per. cent of emetia obtained by Richard and Barruel, as well as Magendie and Pelletier, must be read as 10 per cent.; and the 9 per cent. in good *Psychotria* as at most 6 per cent. He had, perhaps, erred in speaking of this product as pure emetia; his object at the time was not to isolate the alkaloid, but to eliminate an error in the mode of assaying ipecacuanha. In his opinion the amount of chemically pure alkaloid in ipecacuanha had not yet been ascertained.

Mr. **Greenish** would like to ask Dr. Duckworth one question on a point where difficulties would sometimes occur in dispensing these acid preparations. Ipecacuanha wine is frequently prescribed with carb. ammonium, with which the acetic acid would be chemically, if not medicinally, incompatible, how would he propose to meet the difficulty?

Mr. M. **Carteighe** knew of no evidence which conclusively established that emetia was the true and only active principle of the root, and represented all the activity of the latter. As yet there had not been experiments enough to justify the assumption, and it seemed to him unwise for those who had to prepare medicines to assume a thing not proved. Dr. Duckworth had exercised a sound discretion in proposing that the wine should be retained for a time. It was a domestic remedy largely used by nurses and mothers, and so generally recommended in popular works on medicine that it would he inexpedient to expunge from the Pharmacopœia a preparation so well known until the public and the medical profession had learned the value of the acetum and oxymel.

Dr. **Duckworth**, in reply, regarded the use of wine as a relic of old and crude pharmacy. They knew very well that in the middle ages, when pharmacy was in its infancy, rectified or proof spirits were not easily to be had, and that the early pharmacists then adopted such wines as were within their reach, as menstrua. That these wines, which were mere relics of the past, would be abolished, he did not think was a matter of regret at all, at least so far as regarded ipecacuanha wine. With respect to antimonial wine, that was a preparation which he had held in disfavour for some time. He preferred the Dublin liquor antimonii tartarizati, which was dissolved in proof spirit, and in which there was no sherry at all. This was a very much nicer preparation, and the only difficulty about it was that it was clear, and might be mistaken for other things. As to Mr. Williams's hint respecting the manner of treating the ipecacuanha root, and preparing it for solution, that simply concerned those who had to deal with these matters, and who ought to know best. He (Dr. Duckworth) thought it was best to bruise the root. It was quite evident that if a solution were attempted to be made, the solvent must have a difficulty in permeating to the innermost recesses, and that the more the root was broken up the more likely they were to obtain the principles contained in the rhizome. With reference to the active principles contained in the rhizome, he believed they were represented in ipecacuanha wine by the emetia. He thought he was justified in stating that the active principle of ipecacuanha was its alkaloid, because the actions of the alkaloid were precisely the same as those of ipecacuanha. He had made experiments upon different animals, and had used emetia clinically, and the result was precisely the same as when ipecacuanha was given in equivalent doses. He believed that emetia had only been used by himself and a colleague of his in Bombay, who wrote home for some of the alkaloid, and was supplied with an ounce of it. He used this drug largely in acute dysentery, for eighteen months, both upon Europeans and natives; and the result of these researches was that he found emetia to be most valuable—not more so perhaps than ipecacuanha; but still it was given in a simple form, and in small bulk, and therefore commended itself. It was found to exercise all the therapeutical virtues of ipecacuanha in that terrible disease. That was the first instance that he knew of in which emetia had been used therapeutically; and so far with success. Mr. Greenish had put a very pertinent question. Sometimes they saw prescriptions in which there was a combination of ipecacuanha wine with carbonate of ammonia or with alkalies, and there could be no doubt that these were non-chemical preparations. The emetia must be thrown out of solution, and no matter how often a practitioner prescribed that combination, it was not a chemical preparation. He believed that it was also the case with other prescriptions; for instance, he did not think they could successfully treat certain diseases of the bladder without a combination of henbane and alkali, which was found to work well, although Dr. Garrod had shown it to be non-chemical; but as the great aim of the physician was to relieve his patient, he was content to leave the pharmacist to fight the question out with the chemist.

THE PHARMACEUTICAL COUNCIL.

At the February meeting of the Pharmaceutical Council, the lot was taken as to the retiring members. It may be well to explain the method adopted with regard to the rotation of members of the Council. There are in all twenty-one members; of these fourteen are to go out. Seven retire by reason of having served two years, and seven of the remaining fourteen go out by lot. The seven left in this year will be the seven who will certainly retire next year, and half of the fourteen who will be elected in May will be dismissed by ballot.

This year the following go out of office, but are eligible for re-election:—

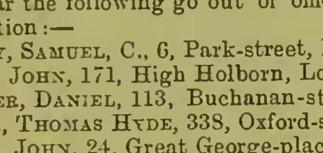
Betty, Samuel, C., 6, Park-street, London, N.W.
Carr, John, 171, High Holborn, London, W.C.
Fraser, Daniel, 113, Buchanan-street, Glasgow.
Hills, Thomas Hyde, 338, Oxford-st., London, W.
Shaw, John, 24, Great George-place, Liverpool.
Smith Edward, 8, The Strand, Torquay.
Woolley, Geo. S., 67, Market-street, Manchester.

The following members remain as members of the Council for the ensuing year:—

Atherton, John Henry, Long-row, Nottingham.
Brown, Wm. Scott, 113, Market-st., Manchester.
Greenish, T., 20, New-st,, Dorset-sq., London, N.W.
Haselden, Adolphus F., 18, Conduit-st., London, W.
Mackay, John, 119, George-street, Edinburgh.
Sandford, George Webb. 47, Piccadilly, London, W.
Williams, John, 10, New Cavendish-street, W.

The following seven go out by rotation, but are eligible for re-election:—

Bottle, Alexander, 37, Townwall-street, Dover.
Edwards, George, Dartford.
Groves, Thomas B., 80, St. Mary's-street, Weymouth.
Reynolds, Richard, 13, Briggate, Leeds.
Savage, Wm. Dawson, Upper Bedford-st., Brighton.
Stoddart, Wm. Walter, 9, North-street, Bristol.
Sutton, Francis, Bank Plain, Norwich.



COCKING'S POROPLASTIC SPLINTS.

An invention of considerable value to Surgeons has recently been brought prominently forward, and it seems to us to merit a careful description. The material, of which samples lie before us, is a sort of stiffened felt. It is supplied in sheets of various qualities, and is readily capable of being moulded into splints, bandages, and other surgical appliances. The mode of procedure is very simple, and demands a little, but not extraordinary, skill. If a splint be required, the surgeon makes a paper form as a guide to size, and then cuts the "poroplastic sheet" to the pattern. In warm-water or steam this sheet readily softens, and may then be moulded by hand into the exact shape required. It soon stiffens again, but then it has the great advantage of being porous, as well as light. Consequently, to the sufferer, the coolness and ease in wearing such a splint must be, in a relative degree, most luxurious. Many high medical authorities have expressed high appreciation of this invention, and we can readily imagine that, to army surgeons and country practitioners, the advantage of being able to manufacture their own splints in a minute or two, of any required size and shape, will be much esteemed, even if there were no superiority in the material itself. We think the article will secure the approval of all who make use of it.

HEART-BED.

The drawing which we give on next page represents a couch which has been designed by Dr. Dobell, and which he has called a "heart-bed." Its characteristics and special value will be best understood if we extract from the *British Medical Journal* a description of the bed written by the maker, Mr. Heather Bigg, Associate I.C.E.

Many chronic cases of heart-disease pass through a stage in which the patient is unable to lie down or even lean back beyond the perpendicular line without distress or danger; and there are many in which at some period of their course the only possibility of obtaining sleep is to lean forward on pillows placed upon a table in front of the patient. This difficulty of position goes on for days and weeks, entailing pain in the back, from the strain upon the lumbar muscles, and compression of the veins and lymphatics of the groins, resulting from the trunk being flexed at an acute angle with the thighs. In addition, there is an interference with the natural action of the stomach and bowels, owing to the postural compression of the digestive organs, the cramping of the diaphragm, and the hampering of the already over-burdened heart by an upward pressure of the abdominal organs. Coupled with these inconveniences, is the difficulty of finding any support for the head and elbows in front which shall not continually slip away when the weight of the patient is thrown upon it, thus disturbing the only possible opportunities of sleep. These circumstances accumulating around a patient already suffering from a distressing disease, combine to constitute a state of martyrdom of the most wearying description.

Dr. Dobell, having endeavoured in vain to find any bed or chair that would at all meet the necessities of these cases, has succeeded in devising a couch which he designates a "heart-bed"; and it appears to meet all the various requirements alluded to—namely, that of supporting the head and arms in a position favourable for obtaining a certain amount of comfort and a passing chance of sleep.

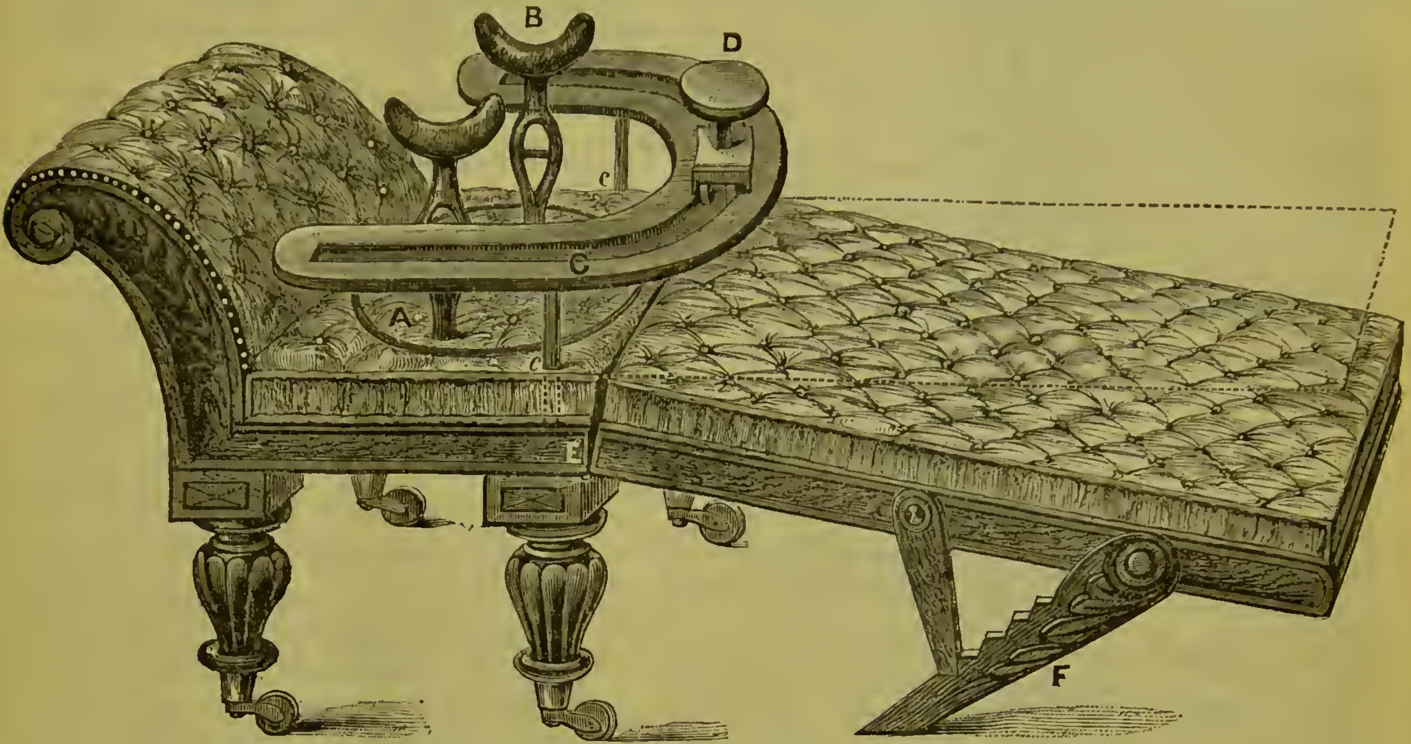
The details of the sketch are thus described:—

A. Revolving seat to enable the patient to turn round in any direction with ease. By removing the centre of the circular cushion, a night-commode can be applied under the bed.

A. Crutches with hand-rests. When tired of leaning forward, the patient can support himself upon the crutches under the arm-pits, or by resting on the hand-rails. The crutches have telescope and buffer springs to accommodate them to the required height with comfort. They can be withdrawn from their sockets and removed when not required.

C. A semicircular table, so placed that the patient can lean forward and rest his arms upon it either in front or at the sides, shifting his position at pleasure by turning round his revolving seat (A). The table can be removed by withdrawing the rods (*c*, *c*) from their sockets, and the patient can then turn his legs quite over the side of the bed and sit with them down; after which the table can be replaced if required. It is sufficiently wide to allow a tray to be placed upon it for meals, a desk for writing, etc.

D. A travelling table upon which to place a cushion for the support of the head. This little table runs upon wheels in a sunken tramway upon the semicircular table (C), and its top moves upon a large ball and socket, thus enabling the patient to shift his position round the table, and turn his head from side to side without removing it from the cushion. Sitting upon the revolving seat with his arms resting on the semicircular table, and his head on the travelling cushion, he can turn about, as restlessness may dictate, with the greatest ease without disturbance of his general position.



E. Hinges to allow the bed to be inclined from the patient's hips downwards, so as to accommodate the position of the extremities to the forward bend of the body, and prevent compression of the abdominal organs and inguinal vessels, and forcing up of the diaphragm. The hinge is so arranged that the lower part of the bed can be disjointed at pleasure, leaving the upper portion in the form of an easy chair.

F. Legs and rackets by which the movable part of the bed can be let down or raised to the horizontal position indicated by the dotted line.

In whatever position, and with or without the table, bedclothes can be used as with an ordinary bed. When the patient is well enough to lie back, the crutches and table can be removed, and pillows placed behind.

PERFUMERY NOVELTIES.

The Oxford and Cambridge Bouquet, is manufactured by Mr. J. H. Whitby, of 6, Worship-street, and labelled in dark or light blue, according to preference. Perfumery may be easily adapted to these occasional events, and should to some extent take the place of gloves and neckties.

Glycerine Rhum, a very refreshing hair-wash of quite harmless composition, useful also for chapped hands or rough skin. Manufactured by Curley and Co. (Limited), of Bartholomew-close. This article is certainly pleasant to use, and is sold at a less extravagant price than many others of the same *genus*.

THE CHICAGO COLLEGE FUND.

THE following is a list of the subscriptions promised up to March 12th, 1872.

The members of the Chicago College of Pharmacy, notwithstanding their own great losses, will themselves provide a new building. Their appeal is solely for donations of articles for the library, lecture-room, and museum. English pharmacists, unable to give books, etc., are invited to send subscriptions of money, the whole of which will be expended by the Committee in the purchase of appropriate contributions.

Parcels of books, specimens of Chemicals, or articles of the Materia Medica, apparatus, and subscriptions, may be sent to Professor ATTFIELD, 17, Bloomsbury-square, London, W.C. Cheques, crossed "London and Westminster Bank," and Post-office Orders, drawn for "High Holborn," may be made payable to JOHN ATTFIELD. All Donations will be acknowledged in the *Pharmaceutical Journal* and CHEMIST AND DRUGGIST.

Amount previously acknowledged, £383 14s. 6d.

	£	s.	d.
W. S. H.	0	2	6
Charles Cracknell, 107, Edgware-road, W.	1	1	0
W. B. Dyson, 4, Gloucester-road, South Kensington	0	5	0

CHEMISTS AND DRUGGISTS OF EXETER

	s.	d.
George Cooper	10	6
Alf. Evans and Co.	10	6
Matthew Husband	10	6
W. H. Bulley	5	0
George Deloes	5	0
John Hibberd	5	0
J. Hinton Lake	5	
Geo. L. Napier..	5	0
Stone and Son	5	0
H. Wynne Tighe	5	0
Ralph Walton	5	0

CHEMISTS AND DRUGGISTS, ASSISTANTS AND APPRENTICES OF MANCHESTER AND DISTRICT.

	£	s.	d.
Brown, W. S., Manchester	5	5	0
Wilkinson, J. ,,	2	2	0
Robinson, B. ,,	1	1	0
Woolley, H. ,,	1	1	0
Wright & Barnaby ,,	1	1	0
Benger, F. B. ,,	1	1	0
Hargraves, H. L., Oldham	1	1	0
Bostock, W., Ashton ..	1	1	0
Waterhouse, J. ,, ..	1	1	0
Bateman, J., Manchester	1	1	0
Ransome and Co. ,,	1	1	0
Roscoe, Professor, F.R.S.,Owens Coll. ,,	1	0	0
Towle, A. P. ,,	1	0	0
Brooks, — ,,	1	0	0
Johnson, T. S. ,,	0	10	0
Mumbray, H. G. ,,	0	10	6
Pritchard, J. ,,	0	10	6
Waterhouse, W., Ashton	0	10	6
Hughes, E., Manchester..	0	10	6
Gill, S. ,,	0	10	6
Siobold, L. ,,	0	10	6
Leete, W. W , Fallowfield	0	10	6
Whittaker, E , Salford ..	0	10	6
Blain, W., Bolton	0	10	0
Sylvester, P., Manchester	0	10	0
Sutcliffe, E. B. ,,	0	10	0
Arton and Leech ,,	0	10	0
Slugg, J. T. ,,	0	10	0
Darlington, M. ,,	0	10	0
Mitchell, J. ,,	0	10	0
Kay, Messrs., Stockport..	0	10	0
Hulme, J., Oldham ..	0	10	0
Townson, T. W., Bowdon	0	10	0
R. M...	0	10	0
Davies, S., Manchester ..	0	10	0
Atkinson, J. ,, ..	0	10	0
Reddish, — ,, ..	0	10	0
Nield, A. & R. ,, ..	0	10	0
Ritson, J. ,, ..	0	5	0
Blyton, — ,, ..	0	5	0
Wilkinson, W. ,, ..	0	5	0
Hughes, J. ,, ..	0	5	0
Carter, W. ,, ..	0	5	0
Mundey, H. ,, ..	0	5	0
Marsden, T. B. ,, ..	0	5	0
Sanderson, T. ,, ..	0	5	0
Hardeman, — ,, ..	0	5	0
Halliday, W. J. ,, ..	0	5	0
Botham, J. ,, ..	0	5	0
Thwaites, A. ,, ..	0	5	0
Holt, J., Manchester ..	0	5	0
Osborne, — ,, ..	0	5	0
Harrison, — ,, ..	0	5	0
Hart, J. ,, ..	0	5	0
Furnival, — ,, ..	0	5	0
Lowe, H. C. ,, ..	0	5	0
Pratt, G. W. ,, ..	0	5	0
Walton, — ,, ..	0	5	0
Jones, — ,, ..	0	5	0
Butterworth, L., Ashton	0	5	0
Wilkinson, G., Manchester	0	5	0
Walsh, E. ,, ..	0	5	0
Myott, W., Oldham ..	0	5	0
Parkinson, W., Oldham..	0	5	0
Clarke, J., Manchester ..	0	5	0
Burton, R. ,, ..	0	5	0
Taylor, F. ,, ..	0	5	0

	£	s.	d.
Williams, F. P. ,, ..	0	5	0
Glover, J. S., Ashton ..	0	5	0
Beard, J., Manchester ..	0	5	0
Pattinson, J. H. ,, ..	0	5	0
Mayor, D. ,, ..	0	5	0
Bushby, T. ,, ..	0	5	0
Edwards, G. ,, ..	0	5	0
Pickup, R. L. ,, ..	0	5	0
Payne & Chapman ,, ..	0	5	0
Alcock, Messrs. ,, ..	0	5	0
Twemlow, — ,, ..	0	5	0
Wild, F. ,, ..	0	5	0
Terry, T. ,, ..	0	5	0
Shenton, — ,, ..	0	5	0
R. T. ,, ..	0	5	0
Gill, J. W. ,, ..	0	5	0
Hulme, T., Salford ..	0	5	0
Gresty, T. ,, ...	0	5	0
Pickup, V. ,, ...	0	5	0
Denton, J. ,, ...	0	5	0
Kellett, H. ,, ...	0	5	0
Boden, —, Blackley ..	0	3	0
Whitfield, —, Salford ..	0	4	0
Cooper, F. R., Manchester	0	2	6
Dodge, W. ,,	0	2	6
Cockshott, J. ,,	0	2	6
Southern, — ,,	0	2	6
Dyson, W. ,,	0	2	6
Miller, — ,,	0	2	6
Faraday, — ,,	0	2	6
S. S. ,,	0	2	6
J. S. ,,	0	2	6
S. C. ,,	0	2	6
Harding, — ,,	0	2	6
Prowse, F. ,,	0	2	6
Bellfield, W., Ashton ..	0	2	6
Heap, H ,, ..	0	2	6
Avison,— ,, ..	0	2	6
Armitage, — ,, ..	0	2	6
Adams, — ,, ..	0	2	6
Green, R. ,, ..	0	2	6
Peatson, —, Manchester ..	0	2	6
Clark, J., Stockport ..	0	2	6
Woolley, D. ,, ..	0	3	0
Holme, J. C., Marple ..	0	2	6
Firth, —, Oldham ..	0	2	6
Wild, W. ,, ..	0	2	6
Berry, — ,, ..	0	2	6
Wall, Mrs. H. ,, ..	0	2	6
Taylor, J. ,, ..	0	2	6
Rhodes, S. ,, ..	0	2	6
Bateman, S. ,, ..	0	2	6
Platt J. W. ,, ..	0	2	6
Broadbent, S. ,, ..	0	2	6
Swire, A. ,, ..	0	2	6
Wolstenholme, A. ,, ..	0	2	6
Pawsey, W., Manchester	0	2	6
Chadwick, — ,, ..	0	2	6
Boorman, — ,, ..	0	2	6
J. K. ,, ..	0	2	6
Ramsden, — ,, ..	0	2	6
M. S. ,, ..	0	2	6
S. and A. ,, ..	0	2	6
Bell, — ,, ..	0	2	6
Pickard, — ,, ..	0	2	6
J. F. B. ,, ..	0	2	6
Smith, —, Salford ..	0	2	6
J. S. B. ,, ...	0	2	6
Cookson, T. ,, ...	0	2	6
Bullock, H. ,, ...	0	2	6
Taylor, —, Manchester ..	0	2	6
Greyson, — ,, ..	0	2	0
Looker, — ,, ..	0	2	0
Thatcher, —, Ashton ..	0	2	0
Ratcliffe, — ,, ..	0	2	0
Johnson, T., Stockport ..	0	2	0
Buckley, Mrs., Oldham ..	0	2	0
Bell, Mrs., Manchester ..	0	2	0
Wilkinson, A. ,,	0	1	0
Howe, G. W. ,,	0	1	0
Kershawe, — ,,	0	1	0
Ridley, E. H. ,,	0	1	0
Gibson, J. C. ,,	0	1	0
Payne, H. ,,	0	1	0
Eardley, T. F. ,,	0	1	0
Hallas, D. N. ,,	0	1	0
Humphries, J., Ashton ..	0	1	0
Crowther, W., Manchester	0	1	0
Walker, Mrs., Oldham ..	0	1	0
Whalley, — ,, ..	0	1	0
Burton, A. ,, ..	0	1	0
T. P., Manchester ..	0	1	0
Andrews, — ,, ...	0	1	0
Snooks, — ,, ...	0	1	0
Fuller, — ,, ...	0	1	0
Skelton, — ,, ...	0	1	1
T. R., ,, ...	0	1	0
Total	£52	10	6

The following is a list of the books, etc., promised up to March 12th, 1872.

[Duplicates of books or lecture-specimens will be dealt with by the Committee, at their discretion, for the general benefit of the Fund, unless instructions to the contrary are forwarded with the parcels. Gentlemen are invited to inquire of Professor ATTFIELD, 17, Bloomsbury-square, London, W.C., as to whether or not copies of the books, etc., which they propose to give have already been contributed.]

F. Hall, M.R.C.S.E., 1, *Jermyn street, London.*—Richardson's "Geology;" "Matter and Motion, or, the Origine and Qualities of Forms," date unknown; Brewster's "Optics;" Mantell's "Invisible World;" "The Universall Medicine, or the Virtues of the Magneticall or Antimoniall Cup, by John Evans, Minister and Preacher of God's Word; printed by Richard Hodgkinsonne, in Thame Street, neer Addle-hill, where you may receive information how to come by the forementioned cups, 1642, 1651;" Turner's "Chemistry," edited by Liebig, 6th edit.; Pomet's "History of Drugg's, illustrated by above four hundred copper cutts, and the way to know the true from the false, 1712."

Augustus Bird, Wood-lane, Shepherd's Bush, W.—The "Life of the Hon. Henry Cavendish," Discoverer of the Composition of Water.

George Barber, 51, *Great George-street, Liverpool.*—The "Pharmaceutical or Medico-Botanical Map of the World;" Barber's Series of Pharmaceutical Labels for Bottles and Drawers; Wurtz's "History of Chemical Theory," translated by Watts.

PAROCHIAL SCIENCE.—The Lambeth vestry is rapidly qualifying itself to be called the comic vestry of the metropolis. During a discussion on the impurity of the water supplied by the South London companies, one of the members said he could not see why bad water should not be destroyed as well as bad onions and bad fish. Another, who states that the Glasgow water was the best in all England (*sic*), finished his speech by a scientific disquisition on the death-rates of Glasgow and London, accounting for the higher mortality in the former city by saying that he supposed there was not sufficient organic matter in the water.—*South London Press.*

PATENTS

[The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de Fidélité, Paris; and 13, Rue de Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

2389. W. Weldon, of Putney. Improvements in the manufacture of chlorate of potash and other chlorates. Dated 11th September, 1871.
2631. A. M. Clark, of London. An improvement in alimentary preparations. Dated 4th October, 1871.
3195. T. Atkinson, of Straffan, Kildare. Improved treatment of cattle suffering from pleuro-pneumonia and foot and mouth disease. Dated 25th November, 1871.
3223. M. G. Raoul, Comte de Favières, of Paris. An improved process of preparing colours. Dated 29th November, 1871
3298. R. Booth, of Manchester. Improvements in apparatus employed in the manufacture of British and other artificial gums. Dated 7th December, 1871.
3305. A. Ball, of Spalding, Lincoln. Improvements in invalid beds and couches, and in fittings therefor. Dated 7th December, 1871.
3394. D. Kilpatrick and R. H. Cooke, both of London Improvements in applying galvanism to the human frame, and in the means used for such purpose. Dated 14th December, 1871.
3436. J. A. Wanklyn, of Harrington-street, Hampstead road. Improvements in the manufacture of ammonia salts. Dated 19th December, 1871.
3448. A. Morris, of the Royal Exchange. Improvements in the production of iodine and bromine and in apparatus therefor. Dated 20th December, 1871.
3454. A. Hugentobler, of Brixton. Improvements in the preservation of fresh meat and vegetables, and in the preparation of extract of meat Dated 20th December, 1871.
3455. W. Anderson, of Inverkeithing, Fife. Improvements in domestic apparatus for rendering sewage gases innocuous. Dated 21st December, 1871.
3469. J. Davies, of Buckingham Palace-road. Improvements in the application and adaptation of electrical currents to certain parts of the body, and in the means for effecting the same. Dated 22nd December, 1871.
3486. H. J. Fenner, of Greenwich, and F. Versmann, of Fenchurch-street. Improvements in obtaining anthracene. Dated 23rd December, 1871.
3493. J. Anderson, of Newbuildings, Londonderry. Improvements in reducing oxides, and in obtaining iron, sodium, potassium, phosphorus, chlorine, or their compounds, and in apparatus therefor. Dated 27th December, 1871.
3500. C. Binks, of Westminster Improvements in treating a certain residual matter left in manufacturing aniline dye, for the manufacture therefrom of valuable products. Dated 28th December, 1871.
3518. B. Tanner, of New Brighton, Chester. Improvements in the manufacture of phosphates of soda and other alkaline bases. Dated 30th December, 1871.
37. W. E. Newton, of London. Improvements in preserving edible, animal, and vegetable substances Dated 4th January, 1872.
64. J. A. Coffey, of Bucklersbury. Improvements in the manufacture, sublimation, and distillation of sulphur, salts tar, oil, fat, quicksilver, and other substances of a similar nature. Dated 8th January, 1872.
103. J. H. Johnson, of London. Improvements in the treatment and utilization of acid gas tars. Dated 12th January, 1872.
111. J. Sullivan, of Thornton, Ontario, Canada. Improvements in apparatus for administering pills. Dated 13th January, 1872.
113. F. P. Warren, of Cosham, Hants. Improvements in tins, canisters, or cases for containing preserved meats or other substances. Dated 13th January, 1872.
140. C. Morfit, of Baltimore, U.S. Improvements in the method of refining fat oils, and more particularly the crude oil of cotton seed. Dated 17th January, 1872.
145. A. McDougall, of Manchester. Improvements in the manufacture of sulphuric acid. Dated 17th January, 1872.
147. C. H. Mack, of Portland, Oregon, U.S. An improvement in artificial teeth. Dated 17th January, 1872.
148. W. R. Lake, of London. An improved bag for containing guano, phosphates, and ore. Dated 17th January, 1872.
190. P. Gaskell, of Birmingham. Improvements in apparatus for drawing off liquids Dated 20th January, 1872.
198. R. B. Arnan, of Torrington-square. Improvements in apparatus for registering the quantities of liquids withdrawn from casks or other receptacles. Dated 22nd January, 1872.
201. H. B. Fox, of Oxton, Chester. An Improved filtering jug. Dated 22nd January, 1872.
210. W. Bradburn, of Wednesfield, near Wolverhampton. A new application of the gases and vapours or fumes resulting from the burning of pyrites, cinders, and of the acid liquid produced by the absorption thereof. Dated 23rd January, 1872.
223. A. Ford, of Notting-hill. Improvements in the mode of treating linseed and other seed and vegetable oils, so as the better to fit them for employment in the arts and manufactures. Dated 24th January, 1872.
231. J. S. Crapper, of Hanley, Stafford. Improvements in apparatus for economising and administering nitrous oxide or other gases for dental or surgical purposes. Dated 24th January, 1872.
248. H. Aylesbury, of Gloucester. Improvements in stoppers for bottles. Dated 25th January, 1872.

272. W. G. Walker, of Helensburgh, Dumbarton. Improvements in preserving food. Dated 29th January, 1872.

288. P. W. Seymour, of Canning Town, Essex. Improvements in the construction of portable magnets, to be employed for curative and other purposes. Dated 30th January, 1872.

305. J A. Jaques, of Tottenham, and J. Banks, of Wood Green. Improvements in the manufacture of surgical instruments. Dated 31st January, 1872.

311. A. McDougall, of Manchester. Improvements in the manufacture of common salt. Dated 31st January, 1872.

317. W. Weldon, of Putney. Improvements in the manufacture of chlorine, and in apparatus and arrangements for that purpose. Dated 1st February, 1872.

327. W. J. Curtis, of Holloway. Improved means of, and apparatus for, obtaining extracts or infusions from vegetable or other substances, and filtering or clarifying liquids. Dated 1st February, 1872.

329. W. R. Lake, of London. An improved method of preparing and preserving hops for the manufacture of beer, and for medicinal purposes. Dated 1st February, 1872.

332. F. M. Franklin, of Noble-street. Improvements in capsules. Dated 2nd February, 1872.

336. G. Jowett, of Bradford, York. A new or improved apparatus for beating eggs. Dated 2nd February, 1872.

355. W. Betts, of Wharf-road, City-road. Improvements in machinery or apparatus for capsuling bottles and other like receptacles. Dated 3rd February, 1872.

358. E. Burgess, of Wells, Somerset. Improvements in apparatus for evaporating and incinerating alkaline lyes or solutions, ordinarily used in the manufacture of paper, and in the treatment of such solutions when spent for the purpose of recovering therefrom valuable chemical products. Dated 3rd February, 1872.

359. W. Weldon, of Putney. Improvements in obtaining and decomposing sulphate of sodium and sulphate of potassium, and in obtaining hydrochloric acid and chlorine. Dated 5th February, 1872.

362. A. G. Bell, of Wardour-street, Oxford-street. An improved galvanic belt. Dated 5th February, 1871.

Letters Patent have been issued for the following :—

1776. B. Tanner, of New Brighton, Chester. Improvements in the manufacture of superphosphate of lime, so as to control its soluble condition. Dated 7th July, 1871.

1801. J. A. Wanklyn, of Harrington-street, Hampstead-road, and W. Essie, of Hendon. Improvements in the preservation of milk. Dated 10th July, 1871.

1851. J. T. Way, of Kensington. Improvements in the manufacture of soluble phosphate of lime. Dated 14th July, 1871.

1918. W. Hunt, of Castleford, near Normanton, York. Improvements in the manufacture of chlorate of potash, and in apparatus to be employed for that purpose. Dated 21st July, 1871.

1947. E. G. Brewer, of London. Improvements in belts to be worn to prevent sea-sickness, and for other purposes. Dated 25th July, 1871.

1956. R. S. Craig, of Richmond, Surrey. Improvements in the preparation of farinaceous compounds for making soup. Dated 25th July, 1871.

1978. W. Lorberg, of Cricklewood, Middlesex. Improvements in the manufacture of soap. Dated 27th July, 1871.

2028. J. T. Way, of Kensington. Improvements in the manufacture of phosphates of soda and potash. Dated 1st August, 1871.

2086. R Scott, of West Calder, Midlothian. Improvements in treating mineral and other oils, and in apparatus therefor. Dated 8th August, 1871.

2090. J. Duncan, of Mincing-lane, J. A. R. Newlands, of Brixton, and B. E. R. Newlands, of Charlton, Kent. Improvements in the treatment of saccharine solutions in the manufacture of sugar. Dated 8th August, 1871.

2123. J. Young, of Limefield, Midlothian. Improvements in the treatment of hydrocarbon oils. Dated 11th August, 1871.

2140. J. I. Lupton, Surrey. Improvements in the mode of deodorizing and utilizing sewage. Dated 15th August, 1871.

2169. W. Weldon, of Putney. Improvements, having for object the recovery of the sulphur employed in the manufacture of soda and potash. Dated 18th August, 1871.

2170. W. Weldon, of Putney. An improved method of manufacturing chlorine. Dated 18th August, 1871.

2200. R. C. Moffat and A. McLaren, both of Glasgow. Improvements in treating mineral and other oils, and in recovering sulphuric acid therefrom. Dated 22nd August, 1871.

2204. J. Salter, of Newport, Monmouth. Improvements in surgical trusses, suitable for various kinds of ruptures. Dated 22nd August, 1871.

2212. H. Codd, of Park-place, Caledonian-road. Improvements in bottles for containing aërated liquids, and in apparatus for filling such bottles. Dated 22nd August, 1871.

2231. T. J. Smith, of London. An improved process for producing ammonia. Dated 25th August, 1871.

2232. T. J. Smith, of London. Improvements in the production of chlorine and hypochlorites. Dated 25th August, 1871.

2240. W. R. Lake, of London. An improved bed or couch for facilitating the use of clysters or injections. Dated 95th August, 1871.

2262. W. B. Robinson, of Chesterfield, Derby. Improvements in the manufacture of the cylinders or rings of boxes made from wood shavings or chips, or from strips of pasteboard or paper. Dated 28th August, 1871.

2267. J. Townsend, of Glasgow. Improvements in treating phosphates and other substances containing alumina, and obtaining products therefrom. Dated 29th August, 1871.

2374. J. Maclear, of Glasgow. Improvements in utilising byo products of the soda and potash manufactures, and in apparatus therefor. Dated 8th September, 1871.

2516. F. C audet, of Coleman-street. Improvements in treating solutions obtained from burnt cupreous pyrites. Dated 23rd Sept., 1871.

2558. J. Young, of Kelley, Renfrew. Improvements in the manufacture of carbonate of soda, and in the recovery of materials employed therein. Dated 28th September, 1871.

2594. L. Blaise, of St. James'-street. Improvements in urinometers, saccharometers, alcohometers, and other measures of density of fluids or liquids. Dated 2nd October, 1871.

2667. H. Deacon, of Appleton House, near Warrington, Lancaster. Improvements in the production of sulphate of soda, of sulphate of potash, and of chlorine. Dated 9th October, 1871.

2761. J. Welsh, D. Hope, and J. C. Stevenson, all of Liverpool. Improved means and apparatus to be used in purifying atmospheric air previous to admission into dwelling-houses, public and other buildings, in the ventilation of such buildings and regulation of the temperature thereof. Dated 17th October, 1871.

2770. H. H. Stephens, of Glasgow. Obtaining sulphate of ammonia from urine. Dated 18th October, 1871.

2871. J. H. Chaudet, of Rouen, France. A new method of obtaining cellulose, savonule and lacs from the chemical treatment of dyewoods, from which the colouring matter has been extracted. Dated 26th October, 1871.

28 J. Campion, of Louth, Lincoln. Improved apparatus to be used in the manufacture of certain kinds of confectionery. Dated 28th October, 1871.

302 J. J. Baranowski and J. Skwarkow, both of Paris Improvements in the manufacture of capsules for bottles and other vases, and in the machinery employed for that purpose. Dated 9th November, 1871.

3022 T. Hyatt, of Gloucester-gardens, Hyde-park. Improvements in the treatment and preparation of certain chemical compounds, so as to render their carriage and transit more convenient and economical. Dated 9th November, 1871.

3060. W. H. Hughan, of Salford, Lancaster. Improvements in the utilization of night soil, ashes, and cements or limy matter for the production of manure and other useful purposes. Dated 13th November, 1871.

3085. H. A. Tilden, of New Lebanon, New York, U. S. An improved compound for disinfecting and deodorizing. Dated 15th November, 1871.

3180. J. V. P. Lagrange, of Paris. An improved process of purifying and clarifying saccharine juices and syrups. Dated 23rd Nov., 1871.

3188. T. F. Henley, of Pimlico. Improvements in the treatment of liquid organic substances for the preservation of the same from decay. Dated 24th November, 1871.

3213. J. Paterson, of Edinburgh. Improvements in capsuling bottles and other vessels, and in the apparatus or means employed therefor. Dated 28th November, 1871.

3311. H. Larkin, of Theydon Gernon, Essex, and W. White, of Hampstead. Improvements in the reduction of certain metallic chlorides. Dated 7th December, 1871.

3366. W. R. Lake, of London. Improvements in galvanic batteries. Dated 12th December, 1871.

3387. A Vazquez and J. E. Rosenberg, both of Fleet-street. A new or improved mode of preserving meat, poultry, game, and fish. Dated 14th December, 1871.

Specifications published during the month :—(Postage 1d. each extra.)

1871.

1147 B. Tanner. Superphosphate of lime. 6d.

1149. A. S. Stocker. Bottles and stoppers, etc. 1s. 10d.

1243. H. Chance. Retorts for concentrating sulphuric acid. 1s. 2d.

1269. F. G. Fahlman. Disinfecting fœcal matter. 8d.

1282. F. Kinnear and another. Medicated flannel bands. 4d.

1305. E. Königs. Treating pyrites to obtain sulphate of soda and chlorine. 4d.

1310. W. S. Laycock. Pressing linseed, etc. 4d.

1311. W. J. Menzies. Treating phosphates. 4d.

1337. H. Aitken and another. Manufacture of alum, etc. 4d.

1357. H. Larkin and others. Bleaching powder. 10d.

1363. P. Rumine. Producing ozone. 1s.

1369. R. Olpherts. Indigo presses. 10d.

1374. A. M. Clark. Preparing Colours. 4d.

1385. J. Glover and another. Manufacture of bleaching powder. 4d.

1406. R. Dawlings. Decolorizing syrups, oils, etc. 4d.

1416. B. E. R. Newlands. Production of alum. 4d.

1420. C. Morfit. Treating crude and mineral phosphate of lime, etc. 4d.

1439. H. W. Putnam. Wire fastenings for bottles. 1s. 4d.

1460. J. L. Pulvermacher. Electric chains, bands, etc. 1s. 6d.

1487. J. W. Burton. Treating and refining oils and fats. 4d.

1493. J. Stephens. Ventilating hospitals, etc. 10d.

1531. C. Crockford. Producing alkalies and their salts. 4d.

1535. W. A. Lyttle. Voltaic batteries. 4d.

1539. R. Olpherts. Indigo presses, etc. 1s.

1578. J. H. Johnson. Ships or vessels for carrying petroleum. 1s.

1579. G. E. Marchisio. Extracting olive oil. 10d.

1588. E. Pilgrim and another. Stopping bottles, etc. 4d.

1589. J. B. Spence and another. Obtaining sulphate of alumina, etc. 4d.

1592. J. F. W. Templeton. Applying names and devices to stoppers, capsules, etc. 4d.

1598. G. Clifford. Crucibles. 4d.

1635. C. W. Harrison. Applying electricity to therapeutic purposes. 4d.

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COLONIAL BUILDINGS, CANNON-ST., LONDON, E.C.

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Our Country and Colonial Subscribers are respectfully requested to furnish any trade gossip that they may consider interesting.

Subscribers are requested to observe that, for the future, the receipt of The Chemist and Druggist in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

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SITUATIONS AT HOME.

THE PROPRIETORS OF THE "CHEMIST AND DRUGGIST," anxious to make their Journal more than ever the medium of communication between Employers wanting Assistants, and Assistants wanting Situations, have decided henceforth to print that class of Advertisements on a separate sheet as well as in the body of the Journal, and this separate sheet will be forwarded post free to any address on the 15th of the month on receipt of a penny stamp. The Proprietors will be much obliged if Chemists' Assistants will make this announcement known as generally as possible, as it is in their interest that the plan is proposed.

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Strong, Uniform, and Bright.

McMASTER, HODGSON, AND CO. request a trial of their "IMPROVED" FLUID EXTRACT, which was awarded last season the most flattering Testimonials by distinguished Scientific and Farming authorities, and an Extra Class (and the only) Certificate of Merit, by the National Agricultural Society of Victoria (Melbourne) at their last Show.

The well-known House, Messrs. Crosse and Blackwell, say:—"This article gave great satisfaction to all who tried it."

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DISINFECTANTS AT SEA.

The Board of Trade have decided to substitute Chloralum for the Solution of Chloride of Zinc, at present included in the scale of medicines and medical stores issued, and caused to be published by this Board, in pursuance of the "Merchant Shipping Act," 1867.

ADULTERATION OF FOOD AND DRUGS.

MR. MUNTZ, M.P. for Birmingham, has again brought forward a bill with the title of this paragraph, and it was read a second time in the House of Commons on March 6th. The bill contains the same provisions as that of last year, and if interpreted in its literal sense, the second clause might occasion much injustice to retail traders, druggists especially. Any one selling, "as pure and unadulterated, any article of food or drink or any drug which is adulterated and not pure," would by this bill be liable to severe punishment—punishment which might be altogether unmerited. In his speech when moving the second reading, Mr. Muntz explained that by adulteration he simply meant the addition of "poisonous or injurious substances. He expressly stated that he did not contemplate, by this bill, the prevention of such a sophistication as the addition of water to milk, for example. Sir Dominic Corrigan, the clever medical M.P. for Dublin, who supported Mr. Muntz in the main, expressed a desire that the bill should include such frauds, and not only that, but the honourable member insisted that "the word *adulteration* comprehended in its meaning fraudulent subtraction, as well as fraudulent addition or substitution." He instanced the removal of cream from milk as an example of this form of adulteration. It is not necessary that we should print Mr. Muntz's bill in full, as we had intended, because, though it was read a second time, this was only a formal proceeding to avoid the necessity of withdrawing it altogether. It was ordered to be committed on May 1st, but an understanding was entered into that in the meantime the Public Health Bill, a Government measure introduced by Mr. Stansfeld, should incorporate provisions as to adulteration, and it was hoped that the passing of that measure would render Mr. Muntz's bill unnecessary. The Public Health Bill is a rather long one, and if carried will invest boards of guardians with greatly extended powers. They are to be, in the words of the bill, the rural sanitary authorities, and to them is to be entrusted, under the Local Government Board, the execution of the Sewage Utilization Acts, the Nuisances Removal Acts, the Common Lodging-houses Acts, the Diseases Prevention Act, the Artizans' and Labourers' Dwelling Act, and the Bakehouse Regulation Act. The Local Government Board proposes to undertake the execution of the Food Adulteration Act, 1860, and by section 47 of this new bill, it is proposed to increase the penalty for adulteration of food from £5 to £20. Drugs are not referred to, but Mr. Muntz will probably try in Committee to bring them into the scope of the Act.

Some little attention and care will be necessary if this be taken in hand. It is all very well to punish the fraudulent adulterator, but let it be clearly shown that he is fraudulent. Some such principle as Mr. Muntz indicated must be observed, or great inconvenience to trade will result. Take, for instance, the many prepared cocoas on the market. No one regards the proprietors of these as fraudulent, and yet everyone probably knows that what they label "cocoa" is often not by any means cocoa simply. But then on the other hand, if only poisonous or injurious additions are to be regarded as adulterations, a vast number of frauds will be allowed to run unchecked, and a question will often be submitted to country magistrates which all the learned societies in Europe would be incompetent to decide. We should like to know what would be said to the mixture of Epsom salts with oxalic acid which we have heard of as a profitable adulteration. At least that is not a "poisonous" adulteration.

These matters will doubtless be attended to in due time; but there is one paragraph in the Public Health Bill which certainly demands revision. Section 64 provides that "the Local Government Board may make regulations under which purchasers of any article of food or drink may apply to the Local Government Board to have such analysis as is provided for in the Food Adulteration Act, conducted by an officer of that board. There shall be paid to the Local Government Board for each analysis made by an officer of the Local Government Board such fee by the authority or person requiring the analysis as the Local Government Board may determine." If this means that every fidgetty mortal is to have an opportunity of getting an analysis performed by Government for a nominal fee, we need only mention it to show the absurdity and injustice of establishing such a gigantic rival laboratory as we should thus have. But if, as is more likely, the intention is by this means to render the trader liable to a prosecution for selling adulterated articles, we must most earnestly protest against such an unsatisfactory and barbaric method of discovery. We want to know how in such a case will the Local Government Board preserve an honest tradesman from the tricks of an unfriendly and unscrupulous neighbour. Prevent adulteration as far as may be, but not by risking the ruin of innocent men in their business as well as in their reputation, which often would be the case if prosecutions, or even apparent exposures only, were allowed to follow such evidence as this. We have no desire to support any system of fraud whatever, but we doubt the existence of such a mass of sophistication as some alarmists seem to believe in, and in any case we do not recognise the justice of flogging all round so as to make sure that the guilty parties, whoever they may be, shall get their deserts.

PROSPECTIVE.

"Fere libenter homines id quod volunt credunt."

IT was about the middle of March, in the year 1972. The fine spring day was drawing to a close, and the shadows of evening were slowly settling over the great metropolis. In a quiet street, away from the struggling crowds and crashing din of the City, a strangely-garbed figure might have been seen slowly and almost noiselessly wending his way along, under the shadows of the lofty terraces on either side. Apparently heeding nothing around him—as with bent form and muffled face he glided onwards—he certainly did not appear as one who was within sight of his destination. But suddenly, with an almost abrupt halt, he came to a standstill immediately in front of a large and profusely decorated pharmacie. Like every other structure of the same class, this building presented a most remarkable appearance. For not only was each pharmacie of a totally different design to all the rest, but each one seemed to unite in itself as many different styles of architecture as could be possibly brought together in one edifice. Grecian and Egyptian, Roman and Moorish, Corinthian and Gothic, were blended in sublime confusion. The effect of this arrangement was certainly rather striking; so at least it seemed to the ancient-looking stranger, who now, for the first time, raised his eyes to look about him; for starting back, and lifting his hands in wonder, he was heard to exclaim, in wailing accents—"Væ misero mihi! quantâ de spe decidi!" Speedily, however, he recovered his composure, looking half ashamed of himself for the amount of emotion he had manifested. Just at this moment, a sudden flood of light burst over his head; and, turning round, he beheld the dazzling splendour of the electric lamps which had simultaneously bathed the City in well-nigh noonday light. His dark form thus thrown into bold relief by the surrounding brightness presented a spectacle at once interesting and unique. Though surprise was the predominant expression of his countenance, there were other and more characteristic features to be noticed, which would distinctly mark out their possessor as a man amongst his fellows. His face was pale: so pale, indeed, as to seem almost ghastly in the glare of the brightness around him; and on scanning it more closely there was a wan and haggard look visible which told of years of patient labour, and of much strength spent for nought. His eyes shone with a deep-set—almost unearthly—brightness; appearing at one moment to look back through the dim vista of bygone years, and the next, to be piercing the great unknown. And then over all there was such an inexpressible weird-like sort of aspect, which awed quite as much as it puzzled the observer. It was not his intention, however, to make himself a gazing-stock for passers-by; so gathering his cloak more closely around him, he approached the private entrance of the Pharmacie. The door opened quietly to admit him, and he was immediately ushered into the presence of the pharmacien himself, whom he found half-buried in the *debris* of scientific experiments and huge piles of note-books and journals. It was once said of an old and eloquent writer of the nineteenth century—Thomas Carlyle—that though an earthquake might overturn his study, it could not add to its disarrangement; and, slightly extending that idea, it may be safely affirmed that an earthquake might have swallowed up this perverted laboratory with positive advantage as regards its order and neatness.

With the skill of one accustomed to make keen observations, the stranger's practised eye speedily singled out those objects in the room which were familiar to him by old acquaintance. Here, for instance, on a tier of finely-carved marble shelves, were a number of handsome volumes, bearing a title especially welcome to him. They were THE CHEMIST AND DRUGGIST. Well and gratefully he remembered the journal whose monthly advent brought such joy to his pharmaceutical heart; and rejoiced was he to find in these richly-stored encyclopedias, that it was still *facile princeps* among its contemporaries. There too, on the table, was the *Pharmaceutical Journal* no longer the sparkling but frivolous record of transactions which once it had been, but now appearing in ponderous tomes, happily untainted by any shade of an advertisement, and devoting itself purely to pharmacological science, the current number containing an original and most exhaustive article on "Some Undescribed Alkaloids of the genus Allhumbugya, and their effects upon the nervous system of the Pulex irritans." Having then taken a general survey of the room, he proceeded cautiously to introduce himself to its occupant. "Pardon me, friend," he began, "for thus breaking in upon your solitude and disturbing the current of your reflections, and bear with me whilst I briefly explain the reasons which have led me to do so. For a long, long time, my spirit has been greatly troubled by rumours which have reached me of the vast changes effected in the pharmaceutical world. It is just a century ago since I occupied a pharmacy on the very spot where now stands your imposing edifice. Nay," he continued, seeing the look of terror which overspread the features of his companion, "do not be so alarmed at my confession. I am not a bi-centenarian; and surely you, who have made psychism your especial study for so many years, and held intercourse with innumerable spirits (created for the occasion), need not now shrink from one which comes before you in such a very material form. Why! it seems but yesterday since I was but a raw recruit in the ranks of pharmacy, and yet a hundred years have rolled by since I passed into the shades! O tempora! O mores! what changes since then! We pharmacists were a sort of professional lackeys,—too proud to call ourselves *tradesmen*, yet laughed at for trying to be something else Anyhow, we managed to come in for a very large share of work, and a very small share of pay, with a good deal of abuse from both quarters. But now, O fortunatos nimium! Ye have nothing left to wish for, ye are raised to the highest pinnacle of distinction. *Savants* bow down to you;—*literati* are proud to do you homage. There is no post of honour too worthy for you. Your advice and judgment is sought upon the most intricate problems of the day, and your fiat is ever deemed conclusive. But tell me, O gallant knight of the pestle! revelling in this twentieth-century elysium, to what causes you attribute this mighty progress and these vast changes in pharmacy, for I would learn somewhat of them? "Mysterious friend," said the pharmacian, "the reply to your questions is plain, simple, and brief. It is written on our books, on our buildings—yea, on our very foreheads. It is, 'Education!' It is education which has lifted us from the dunghill of drudgery and hard work; it is education which has purified us from the debasing influences of trade; it is education which has purged us from the sordid motives of pecuniary gain; it is education, and education alone, which has raised pharmacy from being the employment of vulgar mercenaries, who sought it only as a means of profit or advancement, and set it in its rightful place as the privileged pursuit of wealthy gentlemen—men of profoundest learning—who are alone capable of prosecuting its study with either credit or success. "I will now accompany you, he continued," to the Fountain-head of our education, where are nightly conducted those stupendous examinations which are at once the pride of pharmacy and the admiration of the world.

It was towards midnight when the mysterious stranger and his companion found themselves at the entrance of the gorgeous temple dedicated to the goddess of Pharmacy. No description could give any adequate idea of the extraordinary size and proportions of this remarkable structure. It towered above, and overshadowed all the surrounding terraces of magnificent mansions among which it was placed, and its gorgeous *façade* represented, emblematically, the various and multitudinous sciences which were incorporated in the wondrous study of Pharmacy. An arch of magnificent proportions fronted the entrance, and served as a pedestal for a beautiful marble statue representing the great benefactor and elevator of the profession, Sir John Simon, as the central figure, with his small, but faithful band of adherents grouped reverently around him. An inscription beneath the statue explained to the bewildered visitor that it was in this attitude that these noble men suffered martyrdom when in 1880 the blindly furious and bloodthirsty mob of ancient pharmacists rushed upon them in Bloomsbury-square, swearing to slay every member of the Privy Council itself, rather than submit to the hateful Poisons Regulations. Alas, misguided ones! How little could they foresee what benefits those Poisons Regulations were to work for them.

No. 17, Bloomsbury-square, had, years ago, been relegated to "dust and charwomen," and was now fast crumbling into ruins. As the two friends entered the temple, the death-like stillness of the place gave the stranger an idea that he was entering a catacomb; and indeed the numerous anatomical specimens on either side of the hall were grimly suggestive of "skull and crossbones." They passed the examiners' room, vulgarly styled "the chamber of horrors," in which met daily a tribunal of mental inquisitors, whose business it was to design and carry into execution such schemes of psychic torture, as should qualify the student for his momentous duties, and entered the examination room. Here were a number of pale, hungry-looking young pharmaciens running the gauntlet of an army of mental warriors, who plied them with innumerable questions upon every imaginable subject, which might have the most remote, temporary, or fortuitous connection with their calling. The knowledge of Latin had, of course, become far too common for that language to be any longer useful as dust in the eyes of the public. The metric system of weights, measures, and coinage, once universal, had long since been discarded on account of its absurd simplicity, and another, most eminently complex, had taken its place. Concerning the basis of its system, or the origin of its theory, the most vague and variant speculations prevailed. It was therefore peculiarly adapted to pharmacy, for no human being was ever likely to master its details.

The ardent struggle for knowledge was not ended when the student curriculum was finished, for it had been enacted that every pharmacien, under pain of banishment in default, must add at least one article to the Materia Medica every twelve months, and that in consequence had grown to terrific dimensions. In chemical and pharmaceutical lectures, too, instead of the simplicity and clearness which had characterized the utterances of former years, it had now become the aim of each one to add syllable to syllable, and to pile up prefixes and suffixes, the highest honours being given to the professor who was the most incomprehensible, and who achieved the greatest mystification.

"Friend," at last said the ghostly visitor to his companion, "let us hence! I have no desire to return to the shades burdened with terrible problems in mathematics, geology, or speculations on the ancient Darwinian theory—and see! the grey light of dawn is already breaking in the east, away there!" They stood once more in the open street. Here they parted. The mysterious stranger solemnly laid his hand upon the shoulder of his friend, saying with earnest emphasis:—"I thank *you* most deeply for your courtesy and kindness, and I thank Heaven I am not a pharmacien in the year 1972."

Corner for Students.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

The chemical formulæ employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopœia* the symbols corresponding to those adopted here are printed in heavy Clarendon type. The new editions of Fownes's *Manual of Chemistry*, and Attfield's *Chemistry: General, Medical, and Pharmaceutical*, supply the data required for calculations, and are recommended as text-books.

ANALYTICAL EXERCISE.

This month we intend giving another mixture of salts for analysis. It is to be examined for the metallic and acidulous radicals; and as the mixture shall be such as to place all our correspondents on as equal a footing as possible, presenting only the slightest difficulties in analysis, we shall expect some trouble taken to secure correct results.

Students who wish to compete should send in their names and addresses before the 20th inst. On the 25th we shall forward samples of the mixture.

Students' papers will, as usual, be received up to the 15th of the following month.

ANSWERS.

The mixture given for analysis in January contained lead, barium, and strontium as nitrates; also a trace of iron (dyad), and a slight trace of hydrochloric acid. It was not entirely free from magnesium and calcium, but the quantities present were exceedingly small.

The most striking feature in the analysis which we have received of this mixture, is the thoughtless way in which the examination for the acids has been conducted by most of our correspondents. It should be remembered that in detecting the basylous radicals, a great deal is done towards the detection of the acidulous radicals. When the substance under examination is soluble in water, as it was in this case, it is quite unnecessary to seek for any acid, which forms with any of the metals formed, a salt quite insoluble in water. Thus the presence of lead implies the absence of carbonic, phosphoric, hydrosulphuric, citric, oxalic, and tartaric acids, besides several other less important acids; and there could be nothing more than a trace of hydrochloric or sulphuric acids. Barium being present, excludes even a trace of sulphuric acid. We might multiply instances, but this will suffice to show the necessity for consulting a table of the solubility of salts, when the metallic radicals have been detected, in order to avoid unnecessary testing for the acids. If in the preliminary examination it has been found that the substance does not carbonize when heated, of course it is unnecessary to examine it for those substances which do carbonize; a fact which most of our correspondents have overlooked.

We are satisfied that if students would carefully consider the results of their analysis before forwarding their papers, some of the inconsistencies, which are at present left to us to point out, would be observed, and the sources of error discovered. The result would be, not merely a higher place in the list, but a much more valuable knowledge of chemistry than can ever be derived from the thoughtless performance of any amount of experiments. The student who, in the course of an analysis, makes an observation, or finds a substance present, without carefully considering what is implied by what he has observed, or discovered, is only half studying chemical analysis; for it is the greatest merit of well-directed scientific study, that it not only enables one to see what might otherwise pass unobserved, but also to foresee what would otherwise be unknown.

PRIZES.

The First Prize for the best analysis of the mixture of salts has been awarded to

W. A. SHENSTONE (W. A. S.) 17, Bloomsbury-square, W.C.

The Second Prize for the second best analysis of the same mixture has been awarded to

JOHN W. SMITH, 73, Park-street, Halifax.

Marks awarded for Answers.

	Total.
W. A. S. (*1st prize*)	92
J. W. Smith (*2nd prize*)	91
Pharmacopœia	89
Spes	88
C. H. Fleming	88
Dalton	85
W. Laugher	83
A. N. L.	73
F. W. Fletcher	70
Devonian	68
J. Dale	60
E J B.	60
D. Hayward	58
C. St. Clair	56
J. H. Watson	15
W. Mather, jun.	12
Scotchman	10
Omega	5

TO CORRESPONDENTS.

⁂ All Communications should include the names and addresses of the writers; those which reach us after the fifteenth day of the month succeeding that in which the questions appear will be disregarded.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

Pharmacopœia.—You do not appear to have examined the hydrochloric acid precipitate for any metal except lead. We much prefer a direct application for the sample.

C. H. Fleming.—Such a small quantity of sodium is detected by the flame reaction that scarcely any ordinary salt can be said to be free from it.

Dalton.—You must have added nitric acid, instead of hydrochloric acid, to the original solution, as a single drop of dilute hydrochloric acid would have given a considerable precipitate.

A. N. L.—You might have saved a great deal of time and trouble, when examining for the acids, by considering what acids must be absent from an aqueous solution containing salts of lead, barium, and strontium.

F. W. Fletcher.—You state that you examined a few dekagrams of the substance in a test tube, meaning, doubtless, decigrams. In the metric system, the Greek prefix multiplies, and the Latin prefix divides, the unit of weight or measurement. The statement that cadmium was present is not supported by very substantial evidence. Instead of obtaining a yellow crystalline precipitate with hydrogen monosulphide, we got a reddish brown precipitate, part of which disappeared when an excess of the gas had been passed through the solution, leaving only a black precipitate.

Devonian.—If you had fused a portion of the substance with a bead of sodium carbonate, and potassium nitrate, as you should have done in the preliminary examination, you could not have concluded that manganese was present.

E. J. B.—The precipitate which you mistook for bismuth was probably due to lead, which, in the state of sulphate, is slightly soluble in water. A trace of it was very likely to be present, if sufficient time was not allowed for the formation of the precipitate.

D. Hayward.—Having detected lead in the hydrochloric acid precipitate, you should have hesitated before proceeding with the analysis of the first filtrate, when you found that it gave no precipitate with hydrogen monosulphide. In consequence of lead chloride being slightly soluble in water, this metal can never be entirely separated from a solution by the addition of hydrochloric acid; so that if lead is detected by means of this reagent, there must be a precipitate on the addition of hydrogen monosulphide.

C. St. Clair.—We cannot account for your failure in the detection of strontium; it was present in considerable quantity.

J. H. Watson.—The fact that the hydrochloric acid precipitate was not blackened by the addition of ammonia, does not prove silver to be present; it merely indicates the absence of mercury. The red precipitate produced on the addition of hydrogen monosulphide consisted of lead chloride and sulphide; it is often produced when hydrochloric acid is in excess.

W. Mather.—We are quite unable to account for your detection of so many substances; and are disposed to think that your errors arise from want of more accurate observation. We should recommend you to practise the analysis of mixtures of known composition, so as to become familiar with the various reactions. If you trust to the descriptions of reactions which are to be found in books, without making the experiment for yourself, you will often find a difficulty in telling whether your results correspond with those described or not.

Omega.—We require an account of the analysis, and prefer it in a tabular form. Without such an account we cannot form a just estimate of the merit of your analysis, or point out the sources of your errors.

REVIEWS

WATTS'S DICTIONARY OF CHEMISTRY.*

NO other work in the English language is so calculated to impress the student with a perception of the vast amount of original and active research which is proceeding in the fields of chemistry, as this supplementary volume of the great work with which Mr. Watts has linked his name. The subjects which are treated in it are those which have been investigated during the last four years. With the editor's vast power of condensation it may be certainly assumed that from beginning to end there is not a superfluous word, and yet the volume contains 1,136 royal octavo pages of closely printed matter.

During the publication of the preceding volumes we had such frequent occasion to comment on the thoroughness and conspicuous ability with which Mr. Watts worked out a most difficult plan, that we cannot more highly express our appreciation of this volume than by remarking that it is in every respect worthy to follow the previous ones.

The contributors to this volume are, first, Professor G. C Foster, B.A., F.R.S., whose articles on Electricity and Heat are very elaborate *résumés* of recent investigations. In the first occurs an interesting description of Magneto-Electric Induction Machines. Dr. Michael Foster contributes a condensed article on Proteids (albuminoïds), a subject of which he is peculiarly the master. Dr. B. H. Paul writes two short articles, one on Beer, the other on the Metallurgy of Iron. The first is too much like "popular science" and tells us little new; the second contains a clear and interesting account of Mr. Siemens' process for the manufacture of malleable iron and steel. Dr. H. E. Roscoe is the author of essays on the Chemical Action of Light, and Spectral Analysis. As a summary of a very important branch of science, in which there has been great activity lately, the last-named article is of great interest, and as a specimen of condensation it is one of the gems of the volume. It might be desirable that scientific men should decide whether to term this method of examination, *spectrum* or *spectral* analysis. Both are correct, but we conceive that the former is the most expressive. The last contributor is Mr. J. A. Wanklyn who writes on certain Ethers and Alcohols with his usual skill. The aid which Mr. Watts thus acknowledges is valuable, but it still leaves the vast bulk of the work to be performed by himself, and he has accomplished his part with such painstaking labour and with such comprehensiveness of detail that this supplement is by itself a most valuable dictionary of *very* modern chemistry. Among the articles by the editor to which we think special attention may be directed is that on Aniline, a very able one on Aromatic Series, a useful summary of our most recent acquaintance with the chemistry of cinchona and its salts, and a whole host of shorter abstracts. Indispensable to the purely scientific chemist, this supplement is of inestimable value to the chemist who is not so completely devoted to scientific pursuits as to be quite *au fait* with every modern discovery and theory.

CONSUMPTION PREVENTABLE.†

DR. MACCORMAC claims to have made a discovery in medical science which, if it be true, should place him higher on the pedestal of fame than any other physician who has ever lived. If his assertions shall be fully established he will deserve the highest monument and the most profuse honours which Great Britain can bestow. Here is one disease stalking in the midst of us which is responsible for one-eighth of all our deaths: a disease which strikes down the young, the fair, the most promising; a disease which lingers long with the sufferer as though it invited the physician to put forth all his skill, gave him every opportunity to improve his practice, and then smiled at his baffled science. Wealth may purchase alleviation, and perhaps sometimes a few extra years of life; but this can be looked for with no certainty, and when it happens it would seem to be rather a caprice of the disease than due to medical skill. Many and many have been the original thinkers and careful observers who have striven to trace the disease to its origin, and who have aimed to stay its advances. Those out of the medical profession are unaware of the laborious investigations into the causes of the tuberculous condition of the lungs which have been made by eminent microscopists and thoughtful physicians both in this country and in Germany and France. Those investigations have not perhaps resulted in any great practical benefits yet, but they do not deserve the implied sneer which Dr. MacCormac seems to cast upon them in the subjoined passage.

> If you ask a pathologist what tubercle is, he will perchance reply, readily, superficial tumour which possibly tends to suppuration. You quietly remind him, that you do not ask where it is seated or to what it proceeds, but only what it really is. He will then, it may be, inform you that there are tubercles yellow and grey and miliary, nay fibroid, induced by depressed vital powers, in short, a defective decaying tendency in the bioplasm. You rejoin as gently as may be that you do not care a button about their colour or size, and as for depressed vital powers you consider that mere φλυασια, since you only desire to learn what tubercles actually are. The pathologist now takes himself up a little as a Frenchman might say, and briskly states that tubercle in fact is a morbid material, which, being deposited on the mucous and serous surfaces and in the areolar tissues, destroys the elements which it implicates. In the excess of your courtesy you beg his pardon, and just remark that you do not want to learn where the material in question is deposited or what tissue it destroys, but only what it assuredly is. By this time our pathologist's colour becomes ever so little heightened, still he answers confidently, that tubercle as resulting from a pathological alteration, degenerates into an opaque, then a friable, lastly a purulent substance, which—But here you boldly interrupt him with the observation that not yet has he replied to your inquiry as to the real nature and essence of tubercle. The pathologist, if he be a candid person, as pathologists commonly are, then confesses, as he might just as well have done at the outset, that he knows nothing whatever, the real nature of tubercle regarded, about the matter.

Dr. MacCormac's theory is that consumption *always* originates from the breathing of pre-breathed air. He insists with great vehemence on the absolute necessity of a constant supply of pure fresh air at all times and to all persons. Night and day the air we breathe should be always free from "pre-breathedness," as he calls it. With this we heartily coincide; and we are confident, too, that a vast amount of disease of almost every kind is induced by the unwise *over-care* which most people take to keep away the life-giving air. At night especially it is the almost universal custom for most persons to half poison themselves by breathing and rebreathing a limited supply of air which by no chance can be refreshed until they leave their rooms. Those who regularly sleep in an atmosphere impregnated with carbonic acid gas wonder how it is that they are so little benefited by their rest, and wonder why they can never attain the robust vigour of the sailor boy or the gipsy lass. By all means let physicians and teachers impress this lesson—the chemistry of respiration—on all around them. It is one of the most important pieces of science, and one of the most neglected.

Why Dr. MacCormac should fasten on consumption as the one result of this foolish habit of excluding fresh air from our lungs does not appear. He seems to have jumped to that conclusion, and his treatise is as remarkable for the absence of any pathological reasoning, as for its sweeping assertions as regards his own theory.

He says:—

> Apart from this, the cause of tubercle could not possibly for one moment subsist or be. Re-breathed air is the *causa sine qua non* of tubercular consumptive disease in its every guise and form; in fine, the continuous unintermitted inhalation of air deficient in oxygen, charged with the *brute* and effete residues of prior respiration, is the one exclusive factor engaged in the production of scrofulous tubercular disease, that if we respire such air consumption is inevitable, and that if we do not respire it, consumption is impossible ever.

The hypothesis that consumption is ever due to hereditary influence he regards as baseless and unreal, and yet everyone, physician or layman, could point him to families among whom there is no shade of doubt there is manifested a tendency to consumption. One after another, each son and daughter emerging from youth, falls smitten by this remorseless foe. Our author would have us believe that it is purely a matter of chance that the disease should occur again and again in the same family, and yet if Dr. MacCormac holds the true theory, how is it that everyone who breathes contaminated air (and nearly everyone must needs more or less) does not, sooner or later, suffer from tuberculous disease? Why is one taken and another left? He might perhaps find some ingenious reply; but the only one that seems possible to us is that some persons have a tendency to the disease while others have not. But as it is to the discovery of that tendency that all pathological investigations tend, we cannot admit that Dr. MacCormac has settled the subject so completely as he himself seems to imagine. His book is a forcible and ably-written plea for fresh air, and as such we welcome it, but it is not what it professes to be, an exposition of a theory which "is calculated to shed a light on the phenomena of tubercular consumptive disease which the last two thousand years have failed to do."

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* A Dictionary of Chemistry, and the Allied Branches of other Sciences. By HENRY WATTS, B.A., F.R.S., F.C.S. Assisted by eminent contributors. Supplement. London: Longmans.

† Consumption and the Breath Rebreathed. By HENRY MACCORMAC, M.D. London: Longmans.

THE STUDY OF MATERIA MEDICA.*

We direct the attention of those interested in the discussion respecting the Pharmaceutical Examinations to an important pamphlet which has been compiled by Dr. Alexander Harvey the Professor, and Dr. Alexander Dyce Davidson the assistant-Professor, of Materia Medica in the University of Aberdeen.

Dr. Harvey puts forward some remarks on examinations which are well worth attention. Of course he is referring more especially to the examination of medical students, and particularly to their examination in that part of materia medica defined as pharmacy, in distinction from therapeutics. His views are the result of twenty-five years' experience as a teacher and examiner.

"As far as regards the mere *recognition* and *naming* of the primary articles of the Materia Medica, he would make the range of acquirement co-extensive with the entire list. This amount of acquaintance with the subject is of easy attainment.

"But beyond this, the writer would make the whole system of school-teaching,—of private study,—and of pass-examination, to hinge on a principle of SELECTION. If the *entire* subject—indiscriminately—shall be insisted on as the *measure* of a candidate's knowledge of it, and as the *range* of the pass-examination, then, it is simply impossible for nine-tenths of the class to do more than acquire a mere smattering of it. Even as divorced from Therapeutics and comprising Pharmacy alone, the subject is too large for even the one or two foremost men in the class—the prize men—really to master. Demanding of candidates the impossible, they necessarily come far short of the possible.

"Far better would it be for students to master well, thoroughly, *so much* of the subject. This done, the rest would follow afterwards as a matter of course. And, what is of capital importance, the pass-examination might then be pitched on a much higher scale than it can, in conscience, be at present. An examiner that vividly realises, as he ought, the fact—that his subject is virtually *illimitable*, will, as things are, make up his mind to rest content with *mediocriter* attainments in it, on the part of candidates. How few, anywhere, pass with credit,—even with the lowest mark of credit. With the mass, everywhere, it is a bare pass,—with not a few, a squeeze through. Yet this need not be. It is simply the necessary result of the system presently in use—of sacrificing the possible to the impossible—the attainable to the unattainable. A student's own work turns on the future pass-examination, and is regulated or influenced by the known character of this. As things are, everywhere, he learns that the standard, although professedly high, is really low; and that while he must strive to get up *something* of *everything*, it will suffice if he give proof that he is not ignorant of what he shall chance to be examined on. The negative rather than the positive best expresses the qualifying standard!

"And what he here suggests as applicable to his own department, he would venture to suggest as applicable to all the departments of Medicine and Surgery. It is in the highest degree absurd—and in its results mischievous, to examine students, as at present, on the *entire* field of each—every one of which has reached dimensions that may well be called *Encyclopædic*. And he would rejoice were the General Medical Council to give its sanction to some such plan as is here sketched out, and to take steps for preparing, or having prepared, an Authoritative Directory of this kind, covering all the branches examined in for a Licence or Degree."

If we exactly comprehend Dr. Harvey's system, it is planned on the principle of naming certain standard articles of the materia medica, which students shall carefully study, and around which, if a well-trained mind shall have carefully studied these standards, will assuredly group themselves almost naturally the minor matters which time will make it necessary to know. There is much force in this, but it applies most effectively to those students who are trained by able masters. There is a grammar in every science as in every language; and just as in learning a language the student should be familiarised with the construction of that language, and not taught from a dictionary, so in science it is far more important that he should acquire an intelligent notion of the principles of that branch which he studies, than that he should pick up, parrot-like, any number of scores, hundreds, or thousands of isolated facts.

The manner in which the authors have accomplished their selection will be best understood by a specimen. They have classified every article and every preparation in the British Pharmacopœia. We take for instance

Ferrum.

FERRUM.	
†Ferrum Redactum.	*Trochisci.*
Ferri Peroxydum Hydratum.	Emplastrum.
Ferri Peroxidum Humidum.	
Ferri Oxidum Magneticum.	
†Liquor Ferri Perchloridi Fortior.	*Liquor.**
	Tinctura.*
†Liquor Ferri Pernitratis.	
†**FERRI SULPHAS.**	*Exsiccata.**
	Pil. Aloes et Ferri.
FERRI SULPHAS GRANULATA.	
LIQUOR FERRI PERSULPHATIS.	
†**FERRI CARBONAS SACCHARATA.**	Mistura.
	*Pilula.**
†FERRI PHOSPHAS.	Syrupus.
†FERRUM TARTARATUM.	Vinum Ferri.
†Ferri et Ammoniæ Citras.	*Vinum.*
†**FERRI ET QUINIÆ CITRAS.**	
TINCTURA FERRI ACETATIS.	
MISTURA FERRI AROMATICA.	

The first column names the Primary Articles of the B. P., and it will be found that the articles are named in four different types according to the estimate of their importance held by the authors, the order being **FIRST**, Second, THIRD, *Fourth*. Throughout the list these four classes are followed. The galenical preparations in the second column are divided into two classes only, those of higher degree being printed in Clarendon type and the lower degree in Italics. The daggers mark those articles which are proposed to be selected for study and examinations; and the asterisks against the preparations in the second column denote that special attention might be directed to those thus marked.

We have thus sketched the outline of the plan suggested by Dr. Harvey. It certainly deserves the attention of all examiners, and they are most competent to criticise it. For our own part we would not advocate any measure merely out of tenderness to the candidates. The vague terror of having to make a leap in the dark, not knowing exactly how far they will be required to leap, is a fine incentive to induce them to severe training. We have on another occasion expressed objection to any excision of the present range of subjects which pharmaceutical chemists are required to master, but that objection does not exactly apply to any scheme which could be shown to tend only to make the course of study more systematic and concise.

BANKRUPTCY.*

We have received a copy of the fifth edition of Mr. John Bath's "Notes on the Bankruptcy and Debtors' Act." We have ourselves watched the working of the new bankruptcy laws with more interest than satisfaction, and we cannot but hope that a still more vigorous effort will ere long be made by our legislature to establish a better basis for the administration of justice between debtors and creditors than exists at present. The chief grievance of the commercial world is that the punishment of a fraudulent debtor is not yet easy enough of accomplishment. The path of a creditor who may have been grossly deceived and swindled is so hedged about with difficulties, delay, and expense, that very rarely indeed does the due punishment fall on the party who deserves it, and thus the Bankruptcy Act fails in exactly that respect in which it was hoped it would be most effectual. Creditors have to choose between bearing those ills they have, and flying to others which are only too evidently worse. A very simple remedy might be devised to check the illegitimate trading, or rather the legalised robbery which blights our commercial system. The appointment of an official—or, if necessary of officials—entrusted with the duty of watching every case of bankruptcy, liquidation, or even private arrangement, and empowered with authority to prosecute whenever circumstances should seem to warrant interference, would we imagine tend very decidedly to the discouragement of reckless and dishonest trading. At a creditor's meeting now, a debtor who, in plain English, has been obtaining goods under false pretences, can face those whom he has defrauded with a calm presence, and observe their just but impotent anger with a placid smile. If both sides knew that a competent Crown prosecutor was present watching the case, it is not improbable that the calmness would change sides. It is easy enough, doubtless, to prove that there is far too much laxity in our custom of giving credit, and it may be a very keen retort on the cheated creditor to remind him that "opportunity makes the thief." But we are quite at a loss to understand how the opportunity can be supposed to condone the crime. Our law-reformers probably think that the Bankruptcy Act of 1869 ought to be sufficient for ten or twenty years at least; and few have the ability, and still fewer the energy, to attempt a resolute attack on the stronghold of fraud. But they might at least supplement, or rather complement, their past labours by such an appointment as we have suggested; and so doing, if they accomplish no more, they would stir up the rottenness and compel such attention to it as should ultimately sweep it away.

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* "The Articles and Preparations of the British Pharmacopœia printed according to their relative Values: designed to aid in the Study of the Materia Medica." By ALEXANDER HARVEY, M.D., Professor, and ALEXANDER DYCE DAVIDSON, M.D., Assistant Professor of Materia Medica in the University of Aberdeen. Aberdeen: Arthur King and Co.

* "Notes on the Bankruptcy and Debtors' Acts, Bills of Sale, and Audits of Accounts." By JOHN BATH, Public Accountant. Fifth Edition. London: Williams and Strahan.

In Mr. Bath's little book, of course the ethics of the question are not touched upon. He has simply summarized in a concise manner the law as it stands. We can recommend his book with confidence, as the condensation of extremely unwieldly Acts prepared by one practically conversant with their working. The methods of procedure, and the duties of creditors, debtors, trustees, and so forth, are methodically arranged, and in every case reference is made to the particular section where the law is laid down.

Literary Notes.

Pereira's Elements of Materia Medica and Therapeutics, abridged. Edited by Robert Bentley, M.R.C.S., F.L.S., etc., and Theophilus Redwood, Ph.D., F.C.S. London: Longmans.

The great work which Dr. Pereira left behind him had too many and notable merits to allow it to be forgotten for a long time after his death, although the subject of which it treated is essentially subject to variation and growth. But his volumes had one fault, which in these days would outbalance all their virtues, and that was their immense bulk. One is always tempted to ask, if Dr. Pereira regarded that work as an "Elementary" one, as he appears to have done judging by the title, what size book would he have given us had he written a "Manual?" Those who are acquainted with the original work, however, know that a great part of it is occupied with other matters, as well as pharmacological materials. We have psychical remedies, imponderable remedies, and physical remedies of all sorts. This was probably an error, for no one would go to such a book for that kind of information. In 1865, Dr. F. J. Farre, assisted by Professor Bentley and Mr. Warrington, published an abridgement of Pereira's work adapted to the 1864 Pharmacopœia, which met with considerable favour. A vast mass of the original was removed, but still Dr. Farre retained and carefully corrected the physiological department of the work, and it has been felt that his book was perhaps more especially useful to medical than to pharmaceutical students. Professors Bentley and Redwood, working from Dr. Farre's basis, have now prepared a volume adapted to the Pharmacopœia of 1867. As a manual of Materia Medica, pure and simple however, we have quite satisfied ourselves that they have greatly improved on that edition. With such a splendid foundation to work upon, and with such competent editors, we are not surprised to receive a volume which leaves little, if anything, to be desired, unless it be some pages of tabular matter, such as boiling and freezing points, solubilities, and other useful memoranda for reference which we think should find a place in a work like this. As a companion to the Pharmacopœia the work is very useful, and we note with much approval the simple manner in which the text and the commentary is distinguished in this volume without resorting to the painful plan of masses of small type. The book has evidently been revised up to the latest hour, and both in the chemical and natural divisions is very complete. It is unnecessary to say that it contains articles on many products not at present included in the Pharmacopœia.

Our Eyes, and how to take care of them. By Henry W. Williams, M.D. London: Tegg, Pancras-lane, Cheapside.

Professedly a popular treatise, this little book contains a condensed description of the diseases and dangers to which the eyes are subject, and indications of the course of treatment, both preventive and curative, which no one can be the worse for knowing. We should have described the book as eminently useful, but for one failing, which strikes us as serious We think it can be hardly possible for a non-medical reader to comprehend many of the descriptions of diseases, &c., which the book contains from the descriptions. A few simple diagrams would have increased its value tenfold. For example, we open the book by chance on page 30, and find the following sentence given to describe a defect of vision called Astigmatism. It is thus explained:—

> Astigmatism usually depends on a difference of curvature in two meridians of the cornea, so that rays passing through one meridian are brought to a focus sooner than those passing through a plane at right angles to the first.

This is one example of many instances. Some of the practical remarks in the book are very good, and we strongly endorse the author's recommendation that anything but the very best and clearest printing should condemn any book intended for use in schools. The author, we should add, is an American physician of some repute as an ophthalmist.

Calendar of the Pharmaceutical Society, 1872.

The Calendar of the Pharmaceutical Society is a register of all its members, associates, officers, etc., and contains besides all information as to its bye-laws, examinations, and educational arrangements. An appendix gives copies of a number of Acts of Parliament which affect chemists and druggists. It is corrected annually, and is indispensable to those who wish to acquaint themselves with the details of pharmaceutical matters.

The Homœopathic Directory of Great Britain and Ireland, and Annual Abstract of Homœopathic Literature, 1872. London: H. Turner and Co.

The Homœopathic Directory is an annual volume containing over 400 pages, and much information besides the directory proper, the combination presenting a valuable work to all interested in the progress of homœopathy. We have here the names and addresses of all the medical practitioners of this school within the United Kingdom and in all foreign countries. Of course the American list is very considerable, but according to this authority there seem to be now but few parts of the world where homœopathic practitioners are not. The Abstract of Homœopathic Literature for the past year (English and American) is a good idea ably carried out. The short article written by the editor, Dr. Herbert Nankivell, at the commencement of the volume is the only objectionable portion. It is pitched in a minor key, and querulously complains of those practitioners who dare sometimes to employ homœopathic remedies, such as belladonna for scarlet fever, or ipecacuanha for vomiting, but who nevertheless "close their eyes to the reason" why these medicines are remedies, refuse to admit the universal applicability of the law of similars, and decline to recognise that it is their "first and chiefest duty to acknowledge the law-propounder" Hahnemann. Surely a man may prescribe any particular medicine he chooses without binding himself for evermore to a sectarian system of medicine; and he ought to be able to do so without being exposed to the charge of dishonesty insinuated in the expression of "salving his conscience." These quarrels between the pot and the kettle are wearisome. There are many practitioners who have embraced and professed the homœopathic dogma; or, as Dr. Nankivell would express it, have perceived it to be their "first and chiefest duty" to submit to the "obloquy and scorn of their professional colleagues," and who yet have found this martyrdom a way of pleasantness, and this 'pathy a path of profit.

The British Pharmacist, the most recent literary venture of pharmaceutical tendencies, was launched only in January last, and has not since been heard of.

The magnet of its course is gone, or only points in vain
The shore towards which its shivered sails shall never stretch again.

An important literary announcement has recently been made of the publication of an "international" series of popular scientific works, which is just about to commence. The first volume of the series will be by Professor Tyndall, on "The Forms of Water in Clouds, Rain, Rivers, Ice, and Glaciers." Professor Huxley will follow, on "Bodily Motion and Consciousness;" Dr. Carpenter on "The Principles of Mental Physiology;" Sir John Lubbock on "The Antiquity of Man;" Dr. Odling on "The New Chemistry;" Norman Lockyer on "Spectrum Analysis;" and many others. It is evident that the subjects and the authors have been well matched in every instance; but it is also quite evident that the mere fractional proportion of foreign authors compared to those of our own nation, flattering as it may be to our national vanity, is out of all relation to our rightful position, and seriously detracts from the "international" prospects of the series. The object of each author, we are told, will be to bring his subject as near as he can to the general reader, and each volume is to be sold in this country at a price not exceeding five shillings. The series will be published by Messrs. H. S. King and Co., in London, and simultaneously in Paris, Leipzig, and New York.

The new books published in 1871 reached a total of 3,547, being 170 more than in any preceding year. Among those were 117 on medicine and surgery. The classification of these new books may be interesting. It is as follows:—Theology, 562; Juvenile, 496; Educational and classical, 479; Year-books and bound volumes of serials, 359; history and biography, 213; arts and science, 203; poetical, 176; fiction, 155; travel, 144; medicine and surgery, 117; essays, etc., 110; political and social economy, 101; law, 75; miscellaneous, 287.

Correspondence

DR. WILLIAMS'S "PULMONARY CONSUMPTION."

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—In expressing my acknowledgements for the favourable manner in which you have noticed my recent work on "Pulmonary Consumption," I beg leave to correct an error which you make when you represent me as having "for forty years devoted his whole attention to this class of cases."

I have always repudiated the imputation of being a "specialist." I hold that no one can thoroughly understand, or effectively treat, pulmonary consumption, or any other disease, who has not studied and treated other diseases also; and as proofs that my attention has not been confined to one class of diseases, I may refer to my having been for ten years Professor of the Practice of Medicine and of Clinical Medicine at London University College; and also to my "Principles of Medicine"—a work which treats of all diseases, and which has gone through several editions, both in this country and abroad.—I remain, Sir, yours faithfully,

C. J. B. Williams.

49, Upper Brook-street, W., Feb. 28, 1872.

THE INCOME-TAX.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Dear Sir,—You are always ready to assist us when we have grievances—pray do so now—and urge all your subscribers to petition against the Income-tax, under Schedule D. There is no class that suffers more annoyance from this odious and unjust tax, and the surcharges that attend it, than the retail chemist. I could name many instances, but believe every town can supply them in abundance. Many of our brethren pay the demand rather than appeal. Urge, therefore, all to unite, and give no vote unless the would-be M.P. promises to contend against it.

Yours truly,
An Income-tax payer,
and a Member of an Anti-Income-tax Association.

Feb. 21, 1872.

THE PHARMACEUTICAL EXAMINATIONS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—I feel compelled to reply to your comments on a letter which I took the liberty of addressing to you last month. In that letter I intimated and proved that, in your criticism of my lecture on the pharmaceutical examinations, you diametrically misrepresented my remarks on three distinct points—not on one point only, as you state in your reply. You observe complete silence on two of the points, and as regards the third one, you endeavour to make it appear as if I had contradicted my own remarks. Let us now see whether this is the case or not. In speaking on the pharmaceutical examinations in general, I expressed my conviction that the many failures alluded to could not be attributed to nervousness. I did not dispute, however, that nervousness on the one hand and pluck on the other hand, frequently affect the success of a candidate, and more especially his place in the list arranged in order of merit. In referring to the various subjects and details of the examinations, I stated it to be my belief that in practical dispensing, where an examiner undertakes to arrange from twenty to fifty candidates in order of merit after seeing each one dispense but one prescription, nervousness and pluck were likely to affect the result to an undue extent.

Whether these remarks are inconsistent, and whether the Editor had made himself better acquainted with the details of my lecture than the author himself, are questions which I will gladly leave to the decision of your readers.

Considering the unmistakeable language I used in condemnation of cramming, and in pleading for examinations affording a fair test of distinction between superficial cramming and sound and lasting knowledge, it would have been greatly interesting to me, and perhaps to your readers, to hear by what process of reasoning you have arrived at the conclusion, that the adoption of my suggestions would encourage cramming, and woud lead to the ruin of the practical character of pharmaceutical examinations. You may have glanced over the report of my lecture, but that you have not read it carefully is very evident again, from the concluding remarks in your comments on my letter.

I remain, Sir, yours respectfully,

Manchester, March 11, 1872. L. Siebold.

CHEMISTS AND JURIES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—About two years since I was summoned on a jury at our quarter sessions, and although I appealed, and stated the responsibility I incurred in leaving my business to the care of my wife, not being able to afford an assistant, I was told that the court could not excuse me, and that I must serve as a juror to the end of the sessions, which I did; but on my return home each day, I found, as a matter of course, an *empty till*. My wife having stated to my customers the facts of the case, they were obliged to go elsewhere. A friend of mine residing at Kemp Town was similarly situated a short time since, having been summoned on a jury at the assizes held at Lewes, and which lasted for several days. Not having an assistant, he was obliged to leave his business in the charge of his wife, and to put up with the loss of nearly a week's takings.

I simply ask in conclusion, Is this just?

I am, Sir, yours faithfully,
J. Edwards.

5, Lewes-road, Brighton, Feb. 29, 1872.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In your excellent article in last month's number of THE CHEMIST AND DRUGGIST, viz., Chemists and Juries, I see you advocate that either all or none should be exempt. I quite coincide with your remarks, and had the officers of the United Society done their duty in 1868, I believe all and every chemist would have been exempt, and that we should not have had to agitate for exemption in 1872.

I think it a very hard case that I, a registered chemist and druggist, should be compelled to serve on a jury whilst the man who can tack Pharmaceutical Chemist to his name should be exempt.

I will shortly state my case. I reside in the suburbs of Birmingham, and conduct my own business with the assistance of an apprentice (when I have one, though at present, and for some time, I have been unable to meet with one). Now, should I be served with a jury summons at the present time, I must either pay an extraordinary sum for the services of a temporary assistant, or leave my business in the care of two women, for the three or four days or week that I must be absent.

Now reverse the case. The pharmaceutical chemist generally has a large shop in the centre of the town, does a good business, and is therefore able to employ one or more assistants, but he is exempt. Who is the better able to leave his business, the pharmaceutical chemist or myself?

I think our various chemists' associations ought to take the matter up, and get up petitions from every town in the kingdom.

In conclusion, if we wish to succeed, every chemist and druggist must stir himself and not leave it to others. If we each do this, then, Sir, we may expect to prosper in our desire.

I remain, Sir, yours truly,

CHEMICUS.

[We have received many other letters on this subject, which it is not necessary to publish. The above, however, present a case not uncommon, but which, in the interest of the community, does seem worth consideration. We refer to an Editorial Note in this issue.—ED. *C. and D.*]

NOTES AND QUERIES

Queries received after the 10th of the month cannot be attended to in the immediately succeeding issue. The Editor will endeavour to obtain any required information for correspondents, but he cannot undertake to send answers through the post.

THE PRELIMINARY EXAMINATION.

A correspondent sends us his thoughts on this subject in rhyme as follows:—

Ye blushing students, whom stern fate has classed
Among the plucked ones, why have ye not passed?
Let each one ask himself with manly sense,
What was it? Nervousness, or ignorance?

When the experienced eye has seen and scaled
The extent of your ability, and dubbed you "failed,"
Each candidate disputes what most he needed,
And thus the former is too often pleaded.

We may admit that Cæsar rather strict is,
But not so the "*Selecta e prescriptis.*"
That and another only need be done,
A paragraph from P.L., '51.

The Latin grammar, many stumble there,
Else fail to exercise sufficient care;
Star-gazing on the ceiling, lost in wonder,
Got out of temper, and so make a blunder.

Unskilled the ancient tongue to our's to render,
They name a case, when they should give a gender;
Or in the muddle of the brain's contention,
Mistake the second for the first declension.

And then arithmetic—it makes some start,
Although 'tis only a mere schoolboy's art;
And they who 've been to school ought not to be
Beat with a sum in compound rule of three.

Figures are simple, and they should be known,
Long ere the prime, or pith of youth is flown;
And decimals, deemed useless and no good,
Most certainly should be well understood.

English comes next—not many stumble here,
Though to a few the answers don't seem clear.
That this is simple, all will surely own:
"Explain the meaning of an abstract noun."

And then the rest, there 's no one can deny,
Are simpler still for those who only try.
But ere I leave you one remark I 'd make,
To help poor candidates, for pity's sake.

Ye who have failed to pass, let each forbear
Amusements of all kinds, and persevere;
When importuned by gay companions, think
Upon your books, nor from your duty shrink.

Stick to your Cæsar in your chamber lonely,
Peruse it carefully, the first book only;
Nor let your grammar pass unlearn'd a bit,
But buckle to it till you 've conquered it.

And if you are not up in figures, let
Some pedagogue instruct, and knowledge get.
These items carried into execution,
Put on the most determined resolution,

Till competent you deem yourself to be,
Then—but not till then—remit your fee.
Your diligence will pay, and you 'll be classed,
No longer midst the "failed," but 'mongst the "passed."

SCOTT.

M. E. L.—We think a young apprentice in the country, leaving business at the hours you name, might reasonably be expected in the house not later than ten p.m. in the winter, and 10.30 p.m. in the summer. In the last year of his time an extra half-hour might be allowed.

Mr. Mildren, of Hayle, recently sent half a dozen of his disinfecting sachets to H.R.H. the Princess of Wales. They were of white satin, stitched with black silk, and in the shape of a miniature sack; one was tied with gold cord, and five with silver cord—one for the Princess, and five for the Royal children. The whole were enclosed in a neat mahogany box, and sent per post.—In acknowledgement of this present, Mr. Mildren was honoured with a letter from General Sir William Knollys, who said: "The packets of sachets were duly received and accepted by the Princess of Wales. And if Sir William Knollys has delayed conveying Her Royal Highness's acknowledgements of the kind motive which prompted Mr. Mildren to offer them, he must request him to accept the explanation, that in the late scenes of trouble at Sandringham, and the pressure of business on Sir William Knollys' hands, he has found it impossible to acknowledge at the time the numerous communications he received. The sachets were highly approved of."

Mr. Bell (*Waterford*).—To be a chemist and druggist in England it is necessary to pass (a) the Preliminary and (b) the Minor Examinations of the Pharmaceutical Society. On application to Mr. Bremridge, 17, Bloomsbury-square, London, W.C., you will receive official particulars of both examinations.

Messrs. Hargreaves and Son (*Preston*).—The *Recept Taschenbuch* of Dr. Emil Winckler is published in Germany. Messrs. Trübner and Co., of Paternoster-row, will procure it for you, price 3s. 6d.

A Befogged C. and D.—It is highly important that every chemist and druggist should know exactly what is by law a "poison," and from several inquiries lately received, there seems some misapprehension on the subject. No article is *legally* a poison, unless it is named in Schedule A of the Pharmacy Act. To that schedule the Pharmaceutical Society may make additions from time to time, with the approval of the Privy Council. This has been done once (December 20th, 1869). Only registered chemists and druggists may sell "poisons." Sales of those in Part I. of the schedule must be registered and witnessed, besides being labelled with the name of the article, the name and address of the vendor, and the word Poison. It is *not* necessary to register sales of poisons named in Part II. of the schedule, but the same regulations as to labelling are established. The schedule (with additions) stands thus:—

PART I.

Arsenic and its preparations.
Prussic Acid.
Cyanide of Potassium, and all metallic cyanides.
Strychnine, and all poisonous vegetable alkaloids and their salts.
Aconite and its preparations.
Emetic Tartar.
Corrosive Sublimate.
Cantharides.
Savin and its oil.
Ergot of Rye and its preparations.

Added (December 20th, 1869):—
Preparations of Prussic Acid.
,, Cyanide of Potassium, and of all metallic cyanides.
,, Strychnine.
,, Atropine.

PART II.

Oxalic Acid.
Chloroform.
Belladonna and its preparations.

Essential Oil of Almonds, unless deprived of its Prussic Acid.
Opium, and all preparations of opium or of poppies.
Added (December 20th, 1869):—
Preparations of Corrosive Sublimate.
" Morphine.
Red Oxide of Mercury (commonly known as red precipitate of mercury).
Ammoniated " " " white " ".
Every compound containing any poison within the meaning of the Pharmacy Act, 1868, when prepared or sold for the destruction of vermin.
The tincture and all vesicating liquid preparations of cantharides.

Vermin-Killers.—Any preparation for the destruction of vermin may be sold by any person if it certainly contains no "poison;" that is, either of the above-named substances. Preparations in which phosphorus is the active ingredient are open for free trade; may be sold by any one, and in any manner. But preparations containing strychnine, or other "poison," may only be sold by registered chemists and druggists. It is not perfectly clear whether sales of the latter must be registered. Vermin-killers are named in the second part of the schedule, as though expressly to exempt vendors from the necessity of registering. But strychnine and arsenic, which are commonly employed as the poisons, are in the first part; and therefore, we have no hesitation in strongly advising all chemists to take he precaution of registering every sale. We would also add, that for their own protection they would do well to insist, before taking any vermin-killers into stock, that the makers should make a declaration stating what is the poisonous ingredient. If makers refuse to accede to this reasonable request, the remedy is sufficiently obvious.

Ebornica.—For grinding ivory-black to an impalpable powder, we know of no better mill than Carr's Patent Levigator Mill, manufactured by Messrs. John Bailey and Co., of Salford. We believe the same firm makes special mills for grinding very large quantities of any article.

Medicus.—Tomes' "Dental Surgery," price 12s. 6d., is considered the standard work on the subject. But for your purpose we think Dr. Smith's "Handbook of Dental Anatomy and Surgery," price 4s. 6d., would be equally suitable. Both are published by Churchill.

Mr. J. A. Allen (Wellington, New Zealand).—We are much obliged for your thoughtful remembrance of us.

T. H. Spilsbury, Esq. (Gambia, Bathurst).—We have received your remittances, and assure you of our attention.

Mr. Edwards (Litherland).—Havell's Submerged Stove was formerly made by Croggon and Co., of Upper Thames-street; but they have discontinued to manufacture the same, and we are not aware that the stoves are made now by any one.

Botany.—A correspondent asks us to recommend a work on botany, suitable to read for the Major Examination. He complains that one has to look through two or three pages of Bentley before one finds the thing specially wanted. There is no book in existence which will exactly suit our correspondent. We will give early intimation in these columns when a book is published guaranteed to teach botany without trouble on the part of the learner: like a suit from Moses, guaranteed to make a gentleman of anybody.

Phosphorus Paste for Destroying Rats, Mice, etc.—The American *Druggists' Circular* gives the following formulæ:—

Take Phosphorus	1 drachm.
Water (lukewarm)	3 ounces.
Rye-meal.	
Butter or lard, āā	3 "
Sugar	2 "

Liquefy the phosphorus in the lukewarm water, and mix it in a mortar with the rye-meal; when cold add the butter and the sugar, and mix them all thoroughly together. The mixture may be more complete if the phosphorus be first reduced to a state of minute division, by liquefying it in warm spirits contained in a bottle, shaking the bottle until it has become cold, and then mixing the finely-divided phosphorus with the other ingredients.

Another formula is the following:—

℞ Starch	12 ounces.
Cold water	8 "
Boiling water	2 pints.
Phosphorus	1½ ounce,

Mix the starch with the cold water, then add the boiling water and stir them together until a jelly is formed, into which, while still warm, the phosphorus is to be put and left for a few minutes covered. The ingredients are then to be well mixed together with a bone spatula, and a little powdered valerian root or aniseed added. It is said that rats and mice will eat with avidity this composition, which should be laid for them in small balls.

M.P.S.—We will endeavour to give you the German formula next month.

At a recent *soirée* of the Greenock grocers, the chairman (Mr. Wilson) said in laudation of the utility of the grocer, that we might do without the chemist and druggist and some other tradesmen; but we could not exist without the grocer and the articles which he supplies.

THE MONTH

On the 2nd instant, a fire occurred on the premises of Mr. Joseph Short, oil and colour merchant, Great Lister-street, Birmingham. It occurred through the ignition of some benzoline, the vapour of which caught the flame of a petroleum lamp which was lit. The woodwork of the shop was much scorched, but prompt measures were immediately taken, and the flames were extinguished without much damage to the shop or stock.

A fire occurred on the 5th instant, on the premises of Mr. Haines, chemist and druggist, Bromsgrove. It appeared that a shop-boy had been sent to the warehouse in the rear of the shop, with the lantern, to get some benzoline from a cask, when from some unexplained reason, the spirit became ignited, and, as the contents of the building consisted of petroline, drugs, chemicals, and other combustibles, great fears were entertained that a very serious fire would be the result. Fortunately, assistance was at hand, and several of the casks of oil were rolled out of danger, and the fire-engines playing on the surrounding buildings protected them. The fire was subdued in about an hour.

On the 9th instant, a fire of a serious character broke out at the chemical works of Messrs. Morris Brothers, of Stockwell-upon-Trent. The fire originated in one of the chambers, and quickly spread to others. Immediately upon its discovery, the engines were sent for from Gainsboro', and although they quickly arrived, the flames had assumed dangerous dimensions. Eventually, however, the fire was extinguished; but not until three chambers out of seven were destroyed, and the damage will probably amount to several thousand pounds. We are pleased to state that Messrs. Morris Brothers are fully insured, the office being the Lancashire Insurance Company, of Manchester.

The question of the appointment of an analytical chemist for the county of Gloucester has been mooted; and the Gloucester Chamber of Agriculture has been asked to support the project. It was argued generally that the appointment of an analyst would be the means of preventing adulteration. No practical action, we believe, has yet been adopted in the matter.

Testimonial to Dr. Muter.—On February 27th the students of the South London School of Chemistry and Pharmacy, Kennington-road, took advantage of the occasion of the birthday of their respected principal, Dr. John Muter, F.C.S., to present him with a handsome carved oak letter cabinet, accompanied by an address congratulating him on the kind and practical method in which the instruction was imparted under his direction. It was mentioned that, although only established for three years, the number of students this session had already exceeded eighty, of whom only five had as yet failed in passing their examinations at the Pharmaceutical Society and Apothecaries' Hall, while twelve had succeeded in obtaining high honours. This fact speaks volumes for the success of the system pursued at our local school of chemistry and pharmacy.—*South London Press.*

Chemical Manufacture.—At the sixth annual meeting of the shareholders of the Runcorn Soap and Alkali Company (Mr. Higson in the chair), it was stated that the towers mentioned in the last report for the recovery of nitrate of soda were in successful operation in part of the works, and were being proceeded with in the remainder. Weldon's process for the recovery of manganese had also been successfully worked for the last two months, the saving earned by these two processes being deducted from the cost of the plant; and it was intended to pursue the same course until the whole is liquidated. A new system having been discovered by Mr. Deacon for the manufacture of bleaching powder, the directors of the company had deemed it advisable to erect plant for the use of this process at the Runcorn works, with a view to the utilization of the hydrochloric acid gas, which had hitherto been sold at a comparatively unremunerative price. During the past year the soap works of the company had been considerably enlarged, also the plant for the manufacture of soda crystals, and a new revolving cylinder, with gas producers and chimney, had been erected for the manufacture of black-ash. A high-level railway and discharging cranes had been constructed through a great portion of the works with the object of economising labour as far as was practicable. The new works were valued at £22,381. The prospects for the present year were favourable as regarded the manufacture of chemicals. The accounts of the company show an available balance of £62,479 8s. 7d., appropriated as follows :—interim dividend of 15s. per share, already paid £9,000; present dividend of 30s. per share, £18,000 ; bonus of £1 per share, £12,000; depreciation fund, £15,000 ; balance carried forward, £8,479 8s. 7s.

POISONS REGULATIONS AT BOLTON.

The Bolton Association of Chemists and Druggists have succeeded in obtaining the repeal of a most stringent and vexatious clause in the Local Improvement Act of 1854, which was as follows :—"And be it enacted, That if any chemist, druggist, or other person in Bolton sell any arsenic or prussic acid or any other virulent poison to any person, except in the presence of a witness, and do not at the time of such sale correctly enter in a book the names and addresses of such person and witness, and the nature and quantity of the poison purchased, and the alleged purpose for which it is intended to be used, every person so offending shall for every such offence be liable to a penalty not exceeding £5, and the burden of proving that this provision has been complied with shall rest on the person charged with such offence."

Some two or three years ago a member of the trade was actually convicted for the sale of so simple an article as ratafia, which was construed as coming within the meaning of the term "*virulent poisons.*" In consequence of some agitation of late, with reference to the sale of "vermin-killers," it was deemed expedient to make an effort to procure the withdrawal of this very vague and indefinite clause. The Association arranged a deputation to the Parliamentary Committee of the Town Council, and forcibly explained the position of the chemists in Bolton, as singular in being subject to such a clause, urging its repeal, upon the grounds that the Pharmacy Act of 1868 offers sufficient protection to the public against accident and incompetency, maintaining that the members in that town ought only to be placed under the same restrictions and regulations, in reference to the sale of poisons, as the trade in general. It is satisfactory to know that the efforts of the Association have been successful, the town clerk having been instructed to procure the repeal of the clause through the Borough Improvement Act at present before Parliament.

SALE OF VERMIN-KILLER.

An inquest was held recently at Oldham, before Mr. John Molesworth, the county Coroner, on the body of a young woman named Elizabeth Barrow, 18, who died on Feb. 25 from the effects of poison. Samuel Harrison said he was assistant to his father, who is a drysalter. He sold the deceased a bottle of Steiner's vermin paste on Tuesday morning, the 20th ult.—The Coroner: Have you a book wherein you enter all poisons you may sell? Witness said he did not enter this sale, in fact it was not necessary. He then read a statement made by Mr. Arthur Hill Hassall, M.D., testifying that he had tested a sample of Steiner's vermin paste, and it did not contain any of the poisons mentioned in the recent Pharmacy Act, and the sale of which is restricted thereby. Witness also stated that there were 700 drysalters in London alone who sold this paste. He also produced a list of the poisons contained in the act, and the Coroner observed that the last regulation provided against the sale of "every compound containing poison, and sold for the destruction of vermin;" so that the paragraph read from Mr. Hassall was a most misleading one, stating as it did that the compound was free of sale simply because phosphorus, which was the active substance it contained, was not mentioned in the Pharmacy Act. Because it was not contained in the Act did not make it less poisonous, and its sale ought to be under the same restriction as strychnine, or any of the poisons mentioned.—Witness: I don't see that.—The Coroner: But I do; and if you like I'll order a prosecution, to put the matter to the test.—The Coroner, in summing up the evidence, observed that these vermin-killers ought not to be sold by drysalters, without the precautions required by the Pharmacy Act being taken. He should be very sorry, but the only way to bring the matter to an issue would be to institute proceedings against the person who sold the paste. Some doubt prevailed as to whether deceased really died from the effects of this compound, or had purchased some other kind of poison also, and it was decided to adjourn the inquiry in order that a post-mortem examination might be made.

At the adjourned inquest the Coroner stated that he had been in correspondence with Mr. Bremridge, and he found that he had been in error in saying that it was necessary to register the sale of all vermin-killers. The case was not concluded.

GAZETTE.

PARTNERSHIPS DISSOLVED.

Dunn, Spencer, and William Stevens Squire, Prince's-square, Finsbury, acetic acid makers.

Tait, Edward Wilmshurst, and John Hall, Highbury-park, Islington, surgeons.

Hubbuck, Thomas, Edward Martin, and William Augustus, Lime street, oil merchants.

Long, William Elliott, and Price James Evans, Chichester, Sussex, chemists.

Evans, James, and John Craven Robinson, Torquay, Devon, surgeons.

Hichens, James Stacey, and William Joseph Richards, Redruth, Cornwall, surgeons.

Brook, Thomas George, and John Giles Caxton, Cambridgeshire, surgeons.

Wood, John Hurd, and William Hurd, Great Bardfield, Essex, surgeons.

BANKRUPTCY ANNULLED.

Mudd, Frederick Charles, Uckfield, Sussex, surgeon.

Trade Memoranda.

Contracts Open.—Parish of Birmingham.—Drugs, drysaltery, for three months. March 20th.

The Woolwich Guardians advertise for tenders for dry saltery, etc., for the inmates of the workhouse for six months.

The Guardians of the Coleshill Union are prepared to receive tenders for the supply of trusses, March 20th ; and also the Guardians of Newent Union, for the same articles, March 20th.

The Guardians of the Portsea Island Union are prepared to receive tenders for the supply of drugs to the union for a period of twenty-seven weeks. Tenders must be sent in by the 21st March.

The Guardians of St. Pancras Union are prepared to receive tenders for the supply of drugs, etc., to the workhouse and Leavesden school. Tenders must be forwarded to the clerk of the union, on or before the 21st instant.

We are informed of the bankruptcy of Frederick George Spicer, chemist and druggist, Launceston, Tasmania. G. P. Hudson, merchant, and F. B. Spicer, chemist and druggist, of that place, are the trustees to whom proofs of debts are to be sent.

In the *Siam Weekly Advertiser*, Dr. Hutchinson, resident physician and surgeon, of Bangkok, announces his gratitude to his friends and patrons, and assures them that he will leave no effort untried to secure a continuance of their patronage. Poor patients! Candid physician!

Under the title "Early Closing Movement," Mr. Fox, of Bethnal Green-road, announces that his establishment will be closed at 9 p.m., Saturdays at 11 p.m. This is a beginning in the right direction; but provincial readers will probably consider it a curious illustration of short hours of work in London.

Mr. Page D. Woodcock, formerly of Lincoln, associated with his son, has purchased the business of the late Mr. H. Wilson, of Norwich. The patent medicine business at St. Faith's, Norwich, will be carried on as before by Mr. Woodcock, sen.

Tea in Packets and Petticoats.—In New York the Women's Tea Company has started in a large way. It is conducted entirely by women, and women only are to be the agents. Men may be among the customers if they like. Miss Susan A. King, the secretary and treasurer, has been to China "alone and unattended" to make arrangements, and she has picked out a special leaf which is to be the only one kind imported by the "Women." In a business-like announcement of the concern, the *American Grocer* says:—"A private opening or reception to the press and a few prominent citizens was given on Thursday evening at the sales-room, 838, Broadway, and was numerously attended." Miss King asked the press and the prominent citizens if their tea was agreeable, and "it was generally pronounced delicious." We should think it was. Fancy that tea-party!

An illustrated catalogue of show-cases, shop-fittings, and shop-fronts has just been issued by Messrs. George Treble and Son. The catalogue contains drawings of some newly-designed cases, very effective, and as prices are attached and full descriptions given, Messrs. Treble's catalogue will be found useful as well as handsome.

Mr. Arthur F. Akehurst, druggists' valuer, etc., of Brighton, has opened offices at 26, Farringdon-street, London, also.

Messrs. Wm. Huskisson and Sons announce a change in the title of their firm, which will henceforth be known as Wm. and H. Owen Huskisson. This eminent firm of manufacturing chemists may almost be said to be older than chemistry itself, having been established first of all, nearly, if not quite, two centuries ago.

The position of the late Mr. Pettefor, in the firm of Cooper and Pettefor, Leicester, has been filled by the son of the senior partner, Mr. Henry Cooper. The business will consequently be carried on in future in the name of Cooper and Son.

"Swell" Shopkeepers.—Amongst the co-operative curiosities of the day ranks the Army and Navy Co-operative Society (Limited), under the patronage of one Serene Highness, two field-marshals, several admirals and generals, with colonels, captains, and subalterns as quasi-shopmen, and the ubiquitous Dr. Hassall with the brevet rank of analyst. We have had the advantage of inspecting one of their trade circulars, and we find that common articles of daily consumption are quoted at about the prices at which they can generally be purchased at the shops of respectable tradesmen; for we can see no great "pull" in tea ("Army and Navy Mixture") at 3s. 6d. per pound. The articles in which they seem most to rejoice are cosmetics, perfumery, and quack medicines, which occupy no less than eight pages of the circular, and on which there really appears to be an "awful sacrifice," for we observe that there is a discount on zylobalsamum (whatever that may be) of 50 per cent., and that Daffy's elixir and violet powder may be bought at a like reduction. We have heard of soldiers turning their swords into pruning-hooks, but this is the first time, to our knowledge, that they have been transformed into butchers' knives, for it appears there is to be a shambles as a sort of annexe. Here we have a military and naval phalanx whose pay comes out of the taxes of the country carrying on an extensive trade under the provisions of the 25th and 26th Vic, which was passed for the benefit of the poor and industrious, exempting their profits from income-tax and their documents from stamps, while those with whom they enter into competition are subject to the most obnoxious and inquisitorial of all impositions—viz, a tax of sixpence in the pound upon the small gains resulting from trades carried on in shops for which they are paying extortionate rents to connections of some of the patrons and directors of this very co-operative society; for we observe the name of Captain the Honourable Robert Wellesley Grosvenor among those of the committee of directors of this queer undertaking.—*Grocer*.

LAW AND POLICE.

A "PLUCKY" CHEMIST.

Mr. Edward Foster, chemist and druggist, of Preston, has been summoned twelve consecutive times at the Preston Police-court for not having his child vaccinated, and has paid heavy fines for not obeying the law in this particular. On each occasion he has addressed the Bench in support of his conduct, opposing vaccination, and he asserts that he intends to resist to the end of the chapter.

SYSTEMATIC PLUNDERING OF HOSPITALS BY A CHEMIST.

At the recent Warwick Assizes, Richard Baxendale, described as a chemist and druggist, of good education, pleaded guilty to two indictments charging him with burglariously entering the Warneford hospital at Leamington, and the Coventry and Warwickshire hospital at Coventry, and stealing quinine, a pestle and mortar, and other articles, to the value of £9. Mr. Justice Keating, in sentencing the prisoner to seven years' penal servitude, said it was a sad thing to see a man like the prisoner, of some education and fit for better things, standing in his present position. The prisoner seemed to have given himself to a bad course of conduct. From the record before him he perceived that he had been twice committed as a rogue and vagabond, the last time for three months, and he had also been convicted of felony.

THE SHIPMENT OF NITRATE OF SODA—IMPORTANT CASE.

On the 21st ult., the judicial committee of the Privy Council had before them an important appeal case, promoted by Messrs. Duncan, Fox and Co., of Liverpool, against a decree of the High Court of Admiralty, in which were involved certain important legal points in respect to the shipment of nitrate of soda. Messrs. Duncan, Fox, and Co., the consignees of a bill of lading of cargo on board the ship *Teutonia*, instituted a cause in the court below against the ship and freight, and against the owner, praying that the ship and freight might be condemned in damage for breach of contract. The facts may be stated briefly. The *Teutonia* was a German vessel, and her master and crew were subjects of the King of Prussia. Her master had entered into a charter with Messrs. Sawers, Duncan, and Co.—a branch at Valparaiso of the Liverpool firm—by which he undertook that the vessel should proceed to the port of Iquique, where she should receive a full and complete cargo of nitrate of soda in bags, not exceeding what she could reasonably stow and carry. "And it was thereby mutually agreed that the vessel should not load more than 7,800 quintals, Spanish weight." It was further stipulated as follows:—"That, after receiving on board the cargo of nitrate of soda, stowing it in the customary manner, and, being duly cleared out at the Custom-house, the vessel should proceed to Cork, Cowes, or Falmouth, at the option of the master, where he should receive orders from charterers' agents, within three days of his arrival, to proceed to any safe port in Great Britain or the Continent, between Havre and Hamburg, both included, and there, according to bills of lading and charter party, deliver the cargo." It was stated in the evidence that the cargo (nitrate of soda) although used for agricultural purposes, is an ingredient in gunpowder, and that the prospect of war would raise the price of it in the market; but that no report of any war between France and Prussia had reached the Valparaiso firm at the time when this article was shipped. The *Teutonia* arrived at Falmouth on the 10th July, and there received orders to take the soda to Dunkirk, in France. Having reached this latter place, the master was informed of the war then raging on the Continent, and he accordingly ran into the Downs for safety, as he feared capture. Upon this it was averred by the plaintiffs that he made default in not obeying the proper orders given, and that on this account the owner of the ship was liable to damages. It was contended, on the other hand, that the *Teutonia* being a Prussian vessel, had no right to carry contraband of war to France, which at the time was at war. The court below, in deciding the case, held that the owner of the *Teutonia* had not committed any breach of contract; and from this decision Messrs. Duncan, Fox, and Co. appealed to the higher court. The judges, however, of the latter tribunal affirmed the decree of the court below, with costs.

AN APPRENTICESHIP DIFFICULTY.—HORNER *v.* PYBUS AND PYBUS *v.* HORNER.

The above were actions tried at the Stockton County Court, on February 12th. Mr. Horner is a pharmaceutical chemist and Mr. Pybus an auctioneer. John Alfred Pybus, the son of the latter, had occasioned the difficulty. This young gentleman was apprenticed to Mr. Horner in December 1869, and his time would not expire until April 1874. In October last, he had a fortnight's leave of absence, and never returned. Each party now brought an action against the other for breach of contract. The damages in each case were laid at £50, and both sides agreed that the two cases should be heard together, and to accept the ultimate decision of the Judge (E. R. Turner, Esq.) Mr. Edwards appeared for Mr. Horner, and Mr. Fawcett for Mr. Pybus.

Thomas Parker Horner stated the facts given above. He said that, as far as he was able, he had taught his apprentice the business. Latterly he was so far advanced, that he had assisted to dispense prescriptions. The usual work of an apprentice to a pharmaceutical chemist for the first year or so, would be to open and close the shutters, sweep the shop floor, clean the mortars and measures, dust the bottles, and do anything appertaining to the business. It is usual for the apprentice to run errands. This is perfectly understood when there is no errand boy.

His Honour could not see what sweeping the floor of a shop had to do with the business of a pharmaceutical chemist. He should say that was a breach of contract.

Mr. Horner's examination continued. He had taught the boy in the same way that he was taught, and had himself swept the shop, cleaned the windows, etc., etc. This was usual in a small establishment where there are no porters. Should have taught the boy his business more and more. Apprentices were not of much use at first. Defendant's son had begun to be useful. Having gone through his initiation into the business, he could not be replaced, except perhaps by paying a young man £20 a-year, and giving him board and lodging, which would cost perhaps £30 a year in addition.

In cross-examination, Mr. Horner said he might perhaps get another apprentice to be of the same use as the defendant's son was; had been in business four years, and had three apprentices during that time.

Mr. Fawcett: Can you tell me in what way a young man can learn to be a pharmaceutical chemist by sweeping the shop floor?

Witness: We have all to commence in that way. It is not exactly connected with the business; but he knew he would have it to do, nevertheless. I was apprentice to Mr. Boats, of York, a pharmaceutical chemist, and I had it to do. Young Pybus was a sharp boy for my purpose, such as to attend to the retail business, to serve customers, make pills, horse balls, weigh up things for sale, and do everything connected with the business. Perhaps he had one day's work a week in the cellar. He was not obliged to be down there. He could have been upstairs if he did not like it. The second apprentice was named Simpson. He is dead. He did work in the cellar. I am not aware that it is said the working in the cellar killed him. Before young Pybus came to me I did keep an errand boy. When I got a second apprentice there was very few errands to go. Pybus did the work of the errand boy until the time he absconded. Errand boy's work amounts to nothing. Pybus did occasionally drag a handcart about the streets, but it is only what other apprentices had to do. Perhaps Pybus carried out and delivered two dozen bottles of soda water in a fortnight. The rest goes out by carrier. Pybus did not drag the cart about the street more than once a month on the average. He did carry lubricating composition out three times, I believe. There was half-a-hundredweight each time. My cellar is, perhaps, three times as large as the table (4 feet by 10 feet). There is a gas burning in the cellar.

Mr. William Salmon, druggist, Stockton, gave evidence in favour of Mr. Horner. He considered the duties of an apprentice were such as had been defined by the plaintiff.

His Honour here said that the only clause about which he had any doubt, was that with reference to a "faithful" apprentice. Whether it included sweeping the shop, etc., or simply behaving himself properly to his master's family, and marrying his daughter. (Laughter.)

John Alfred Pybus (by Mr. Fawcett) said: I am the apprentice under this indenture to Mr. Horner. I have perhaps made up a dozen prescriptions whilst I have been with him. I was generally in the cellar pounding soda for the lubricating compound. It is for machinery, and not sold over the counter of the shop. It does not require any knowledge of pharmacy. Taking it week by week, I was about three days a-week in the cellar, from nine o'clock in the morning until seven o'clock at night, during the whole time I have been there. On other days I have gone to Mr. Mandall's to catch condensed water, and bring it to Mr. Horner's. I had to do that one or two days in a week. I used to make a good many horse balls. I have made pills in the cellar for sale in the shop. I don't object to that. Mr. Horner showed me how to make up prescriptions about six times. I cleaned the windows, swept the shop, drew the handcart about the streets, and I have been as far as Wynyard and Middlesborough with parcels. Mr. Horner has told me that I was a lazy fool. I went away because I was miserable; because of the names I was called and the work I had to do, which was not calculated to improve my knowledge of pharmacy. Before I went away, I had some conversation in the cellar with Mr. Horner about Mr. Brown, the other apprentice, leaving. He said that when Mr. Brown left I should not be in a position to take his place, and that he would therefore have to get another apprentice and place him over me. I replied that he was most likely right, because I had not sufficient opportunity of getting experience in the shop. Seeing he was going to put another apprentice over me, and being told by him that he was going to keep me at the same kind of work, were the reasons which ultimately determined me to go away. I used to read hard at night.

By Mr. Edwards: This conversation about Brown took place in October. My brother had not made previous arrangements for me to leave my master. I was perhaps two hours a day in the shop. I was working in the cellar and carrying out parcels the rest of the time. The other apprentice also worked in the cellar, but did not carry out parcels. I did not refuse to work in the cellar. I have complained to my master by telling him I thought it was not my duty. I have read a good deal to get up my knowledge of pharmacy. The other apprentice taught me how to make up half-a-dozen other prescriptions. I did not tell my master that I was going to leave when I went away. I have read some of his books. My master lent me a book when I went away, but I did not take it with me.

Mr. Pybus said his son was a very diligent boy at home, and anxious to learn his business. When he came home, he was a steady boy. His principal complaint was that he had no chance of learning his business. He used to sit up till twelve o'clock at night reading medical books, much later than was good for him.

His Honour: I am of opinion that Mr. Horner gave this young man more to do than he covenanted to do. I see he is to be a "faithful apprentice." What is the custom as to sweeping shops I am not here to judge; I don't think it is a proper way to treat an apprentice. Nor do I think it a proper thing to send out an apprentice to a chemist and druggist with soda water, which is not even manufactured on the premises. Then comes the question, is the boy justified in running away in the way he did? I don't think he was, and there must be some damages to Mr. Horner on that point. I don't think myself that he has sustained much damage, as he can get another boy, and place him in the same position occupied by young Pybus; therefore, I don't see much damage made out. I think £10 a sufficient sum, and find a verdict for £10 in the first case, and a verdict for the defendant in the other action, without costs, and the indentures to be cancelled, as agreed between the parties.

Mr. Horace Snelgrove, of Exeter, testifies to the value of Mr. Pulvermacher's bands, commencing his letter with the following unfortunate sentence: "Dear Sir,—It is with much pleasure I write to tell you of a severe case of bronchitis and loss of voice, the patient being my wife." We are glad to hear that Mrs Snelgrove has regained her voice, and hope she has used it again ere this, in reference to the above heartless sentence.

Exchange Column.

Revised Terms.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the Chemist and Druggist, and all correspondence relating to it must be addressed to "The Publisher of the Chemist and Druggist, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

Four Show Jars, with Mahogany Stand, for sale, equal to new. Ellis, chemist, Southport.

The entire Fittings, Bottles, Utensils, etc., of a Surgery, in good condition. A Bargain. Marlar, Halstead.

80 lbs. Prussian Blue. Offer wanted. E., 385, Stockport-road, Manchester.

Bushby's Patent Rotary Pill Machine, nearly new; original price, £10 10s. nett; take £5 5s. 5/485.

Scarificator, 12 blades, good as new, will exchange for microscope; or offers. J. H , 74, Fyld-road, Preston.

2 to 12 gross empty (four-ounce) Eau de Cologne Bottles. Offers wanted. 12/485.

Southall's Case Materia Medica, in good condition. E. Watts, High-street, Bridgnorth.

About four gallons of old Cod-liver Oil. James Mason, druggist, Dundee.

Binocular Microscope, first-class, with apparatus and polariscope, all handsomely fitted in polished mahogany case, price £10. W. H., 151, Hoxton-street, N.

4 dozen Surplus Stock Regatta Perfume Sachets. Offer for whole or part. Sample dozens 3s. 3d., postage paid. Shaw, 8, Allen's Buildings, Paul-street, E.C.

Various Proprietary and Patent Goods, Poppies, Scales. Lists exchanged with gentlemen. Wyles, Bourn, Lincolnshire.

Two 4-gallon Pear-shaped Show Carboys, to be sold a bargain, with cut stoppers; only 10s. The pair delivered on railway. J. F. Robinson, Frodsham, Cheshire.

Strong Iron Slab for top of furnace, with sand-pot to fit for large glass retort, etc., two Furnace-doors and Bottoms, and an excellent Drying Oven, nearly new. 3/485.

Watts' "Chemistry," 1872, 30s.; "Pharmaceutical Journal," Vols. I. to XXIX., £6; Fresenius' "Qualitative and Quantitative Analysis," 21s.; Noad's Works. "Chemicus," 3, Arlington-street, London, N.W.

Owen's Receipts. Aërated Mineral Waters, Continental Liqueurs, Fruit Syrups, Bitters, British Cordials, Wines, Sauces, etc. Post-free, 1s. 3d. 8, Allen's Buildings, Paul-street, Finsbury.

0 Half-pint, 80 Pint, 50 Quart Stoppered Shop Rounds; also 12 Blue Syrups, and 80 Tin Covered Jars; all are labelled, but about 150 have gold labels. Wanted cash offers for all or part. W. Duncombe, Wincanton.

rinting Press 9 by 7, with Ink, Roller, Slab, Quantity of Type, Furniture, Type Case, Reglet, Quoins, Quads, Chase, etc., carriage paid, 21s. Proofs gratis. Easy to work, in perfect order, invaluable to business men. Wyles, Bourn, Lincolnshire.

hree Nitrous-Oxide Wash Bottles, superior articles; one Clover's Face-piece, with two-wayed Stopcock and Bag; one neat Gasometer to stand in room to administer Nitrous-Oxide Gas, holds three gallons. Offers wanted. 16/485.

Hooper's "Medical Dictionary," 20s; "First Lines for Chemists," 2s. 6d.; Pereira's "Selecta è Præscriptis," 2s. 6d.; Accums "Tests," 3s. 6d.; "Choice Collection British Plants," 10s. Mr. Higginson, New Ferry, Cheshire.

rench Polished Mahogany Counter, about 7 feet long; Mahogany-fronted, Panelled, Trussed complete, and Dispensing Screen, consisting of Silvered-glass Mirror in centre, with Marble Slab in front and Case each side; can send Photo. Barton, Gipsy Hill, S.E.

Owen's "Compendium," Receipts and Processes, Pharmacy, Chemistry, Confectionery, Perfumery, Cosmetics, Homœopathy, Essences, Wines, latest Discoveries and Improvements. New impression, 26 stamps. Invaluable. Owen, Chemist, Leytonstone and Stratford.

A Formula for preparing a certain and speedy Cure for Diarrhœa or Scour in Cattle and Sheep, being a prescription from a retired, duly qualified Veterinary Surgeon (who used it in his private practice for over twenty years with eminent success), and is known to no one but the advertiser. It will be sold to one person exclusively if a suitable offer be made within the month of March, but if not, will afterwards be sold at a small charge to any, should there be a sufficient number of applicants. It can be easily prepared in the form of a solid cake, convenient for transmission per post, and will readily sell at a large profit to the vendor. Apply in first instance, giving real name and address, to W. W., 48, Claremont-street, Stapleton-road, Bristol.

WANTED.

"Nitrous Oxide Gas Apparatus." 33/485.

A job lot of Trusses. Marlar, Chemist, Halstead.

A large Marble mixing Mortar and Pestle, in good condition F. Parsons, Leicester.

Pereira's "Selecta è Præscriptis." W. Horniblow, Watchet, Bridgewater.

Pereira's "Selecta è Præscriptis." State price and condition. 1/485.

Royle's "Materia Medica," Pereira's "Selecta è Prescriptis." X., Post-office, Knighton.

Six dozen round Stoppered Stock Bottles, from 20 to 40 oz. J. Baker, Romsey.

A Composition or Marble Mortar, about 18 inches diameter. T. Cuthbertson, Lostwithiel.

Mohr and Redwood's "Practical Pharmacy," United States Pharmacopœia, French Do. Macnaught, chemist, Greenock.

Vol. ii. Old Series, and Vol. xii. New Series, *Pharmaceutical Journal.* State condition and price. "Pharmacologist," 14, Bath-street, Newgate-street, London, E.C.

Four 12-gallon Carboys, with Cut Stoppers, and suitable Blocks, also two or three Tomlinson's Plate-glass Specie Jars, largest size. 31/485.

About 24 feet of Mahogany-fronted Drawers, nearly new, modern, and in good condition. Large Show Jars and Carboys. Mays and Son, South Shields.

"Manual of Dental Surgery," Tomes' "Richardson's Mechanical Dentistry," Robertson's "Manual on Extracting Teeth." State price and condition. F. W., 129, High-street, Guildford.

TRADE REPORT.

Although the almost menacing aspect of the *Alabama* claims has presented a source of anxiety to the commercial community, it is satisfactory to find that trade has not suffered appreciably during the last month. The declared value of our exports in February was 18,329,816*l*., showing an increase of 3,431,040*l*., or about 23 per cent. over the corresponding month of last year, and 25 per cent. over February, 1870.

National differences will continue to crop up as long as nations exist, and a course of uninterrupted prosperity is not always an unmixed blessing. It is, at least, a hopeful sign of the times that this country and America should have even proposed to submit their disputes to arbitration for adjustment; something will have been gained even if the treaty should entirely fall through; and it has not come to that yet. The attitude of the commercial world in this serious crisis has been unprecedented at such a period; and Sydney Smith, who condemned the three per cents. as the greatest fools in Europe, would have been astonished could he have seen that confidence is not necessarily lost, nor trade irreparably injured with the appearance of every cloud which dims the political horizon. We hope, and are sanguine in the belief, that an amicable understanding will be ultimately arrived at between America and Great Britain in reference to the claims. In the meantime alarmist utterances will doubtless be as plentiful and disregarded as on some former occasions.

We look forward with interest to the forthcoming financial statement of the Chancellor of the Exchequer. It is certain that Mr. Lowe will have a splendid surplus at command, and it is to be hoped in the manipulation of the same he will evidence that ability with which he is credited, but which has not been very conspicuous since his first attempt to frame a budget. Public opinion has pretty well indicated at what point the shoe of taxation pinches, and the Chancellor of the Exchequer may probably have learnt by this time that public opinion is not altogether contemptible.

During the past month market transactions have been somewhat restricted, and speculative feeling has to a great extent subsided.

Aloes.—Cape are easier to buy owing to considerable arrivals. Barbadoes are firm, and but little of really fine quality have been offered. The scarcity of fine Socotrine is also noticeable; such kinds would command extreme prices.

The Cochineal auctions on the 29th of February were singularly small, only 293 bags being offered, consisting of 276 bags Teneriffe and 17 Honduras. There was little desire to operate, and, as holders were firm, nearly the whole quantity offered was bought in, only 51 bags being sold. Teneriffe went off at previous rates, and low black Honduras at 1d. decline.

Opium.—After experiencing a prolonged quiet time this important drug has moved upwards. This is attributable to Smyrna advices, which report rumours of damage to the growing crop. Probably the rise will be augmented shortly, as, conjointly with the disquieting rumours referred to, the demand for America has become more active. At auction on the 7th inst. 179 cases were either withdrawn or chiefly bought in; inferior to fine at 12s. to 22s. One case Egyptian sold at 11s. 3d.

Cardamoms maintained their activity until the sales of the 7th, when larger quantities were brought forward and met with a limited demand. Most of the lots were bought in, and of 129 cases of Malabar only 36 sold at rather easier prices. Of 50 packages Madras, 16 cases good Aleppy kind, a little wormy, sold at 7s. to 7s. 1d., one case very ordinary lean Ceylon bought in at 1s.

Cinnamon.—The first periodical auctions of this year were held on the 26th February, when a larger supply of Ceylon was brought foward than for a long time past, the total amounting to 3,439 bales, against 2,886 bales at the coresponding sales in 1871. As holders were willing to accept easier rates, the greater part was disposed of with fair competition. Of the whole about 2,650 bales were placed. Prices, compared with the November sales, show a general decline of 1d. to 2d. per lb. for good and fine qualities, of 2d. for medium, and 2d. to 3d. for ordinary and inferior. The next sales will be held on the 27th of May, when it is probable that smaller supplies will be available. From Ceylon we hear that plantation crops are nearly exhausted, and as peeling is over it is likely that supplies will be somewhat restricted for some little time.

Essential Oils.—Aniseed, as we anticipated, does not maintain its position. The demand has been by no means active, the largest transaction we have heard of being 140 cases brought by the French mail, and sold afloat. Other arrivals are looked for, and these will tend further to depress the market. Citronelle has given way, and may now be quoted at 2d. Lemongrass has nearly maintained its advance; at auction 7 cases sold at 4d. to 4¼d. Cassia, if anything, is firmer, and nutmeg lower. Bergamot and Lemon continue to command high prices, with but small chance of immediate reduction. Of the latter 3 cases "Hadley Avelines" fine bright were bought in on the 7th inst. at 18s., 8 half-jars good 15s. 6d., and 2 jars Bergamot 10s. 6d.

Roots.—Rhubarb has fetched higher prices for all descriptions; good qualities of Colombo are scarce, and there is no Pareira Brava in the market. Orris does not come forward in good supplies, and remains dear. Of 17 packages offered 9 serons good fair sold at 47s. to 48s., the remainder bought in at 70s. to 77s. 6d. for good to fine.

Camphor has not been very active, it being known that the *Chin Chin* and *Commander* with heavy shipments were off the coast. About 3,000 cases have been sold afloat, and during the past week 600 cases China found purchasers at 85s., but at public auction 300 cases were bought in at 82s. 6d. Holders have hitherto refrained from pushing on the market, and hence the maintenance of former prices. Present stock is about 5,119 cases, against 11,150 cases some time last year.

Gums.—Assafœtida is now coming forward, and arrivals of about 450 cases will meet a good market, as all descriptions are much wanted. Gamboge is appreciably dearer, and has been the medium of considerable speculative business throughout the month. Olibanum has likewise commanded attention at improved prices, and good qualities of Myrrh and Benjamin have been well inquired for.

Vanilla is dearer, with every indication of further advance. Advices received by the *City of Mexico* (s.s.) *viâ* New York, report the crop as only one quarter of an average, but beans of a very superior quality, in consequence of which it will take a longer time than usual to cure them. The new crop will probably not be available before the latter part of May or early in June.

Spices.—Pepper. The activity apparent in the early part of the month has subsided. Of white the large quantity of 1,797 bags was offered at auction on the 7th inst. Nearly the whole consisted of fresh import of ordinary quality, and 670 bags were down without reserve; sales of 1,150 bags were effected at a decline of ½d. to ¾d. per lb. Nutmegs and Mace have been in limited request; but for Cloves a speculative demand has sprung up consequent upon a report of the destruction of the crop in Java by heavy gales. This report, which was wired from Singapore last month, requires confirmation. If the fact is correct, it is rather singular that Cloves alone should suffer, and the other spice crops escape. Past experience has made it necessary to accept such vague rumours "*cum grano salis*."

Chemicals.—Trade has been brisk, and export demands continue unabated. The United States has been buying freely, and the early reopening of the Baltic ports has likewise favourably influenced the market. Alkali manufacturers are not burdened with excessive stocks, and altogether prospects are encouraging.

Cream of Tartar has again improved in value, and good business has been done up to 115. Soda Ash and Crystals are both dearer, and Bicarbonate remains firm at a further advance. Bleaching powder still in good demand, and now quoted at 16s. 6d. Chlorate of Potash has experienced an active enquiry, and is scarce and advancing. As much as 1s. 9d. has been paid for English Crystals, immediate delivery, and 1s. 7½d. for some time forward. The present value is 1s. 10d. Agriculturists seem to regard Nitrate of Soda with increasing favour, if the imports may be taken as a guide. During 1871 the total shipments from the West Coast of South America were, 3,605,906 quintals, against 2,943,413 in 1870, showing an increase of shipments of 662,493 quintals during last year. In Sulphate of Ammonia, a fair amount of business has been done, but the price remains unaltered. Citric Acid is further enhanced in value, and there is no immediate prospect of quotations giving way. Tartaric rather inactive. Iodine and Iodide of Potassium are unaltered, but more demand has been evident with the effect of strengthening their position. Bromide of Potassium is slightly easier, but an advance may be looked for shortly.

Oils.—Castor is higher, 550 cases selling out of 1,190 offered, mixed seconds 5d. to 5¼d., 2 casks brown from Calcutta, at 5¼d., 20 ditto from Bombay 4½d., and 6 barrels rather dark. Madras 4¾d. Seal is worth more money, and Cod easier. Olive is neglected, Galipoli being quoted £2 per ton under last month's prices. Cocoa Nut and Palm both offer more advantages to buyers.

Turpentine.—A considerable advance has taken place, apparently from the growing impression that supplies are not likely to be in excess of requirements. Early last week intelligence was received that the *Cleo*, with 1,700 barrels American spirits, had been wrecked; the market became firmer, and prices rose from 56s. 9d. to 57s. 1d.; since then, however, the excitement occasioned by this event has subsided, and the present value is 56s. to 56s. 6d. The stock of American in public warehouses on the 1st March (exclusive of the *Philothea*, off the coast, with 1,300 barrels) was 7,528 barrels, against 8,049 barrels at close of January, and 9,037 barrels some time last year. The stock of French was to 62s, against 134 tons corresponding period of last year. Petroleum offers more advantages to buyers.

Monthly Price Current.

[The prices quoted in the following list are those actually obtained in Mincing lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
ACIDS—										
Acetic ....per lb.	0	4½	to	0	0	0	4	to	0	0
Citric ....per lb.	3	10	..	4	0	2	9½	..	0	0
Hydrochlor. ....per cwt	4	0	..	7	0	4	0	..	7	0
Nitric ....per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic .... ,,	1	2	..	0	0	0	8½	..	0	0
Sulphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal .. ,,	1	8½	..	0	0	1	4½	..	1	4½
powdered ,,	1	8½	..	1	9	1	4½	..	1	4½
ANTIMONY ore......per ton	270	0	..	290	0	240	0	..	280	0
crude ..per cwt	36	0	..	0	0	36	0	..	38	0
regulus.. ,,	56	0	..	56	10	48	0	..	0	0
star .... ,,	57	10	..	58	0	50	0	..	0	0
ARSENIC, lump...... ,,	18	0	..	18	6	15	6	..	16	0
powder.... ,,	7	0	..	7	3	6	9	..	7	3
BRIMSTONE, rough ..per ton	145	0	..	150	0	160	0	..	0	0
roll ....per cwt	10	0	..	10	6	10	0	..	11	0
flour.... ,,	12	0	..	12	6	12	0	..	13	0
IODINE, dry ....per oz.	2	3	..	2	4	0	10½	..	0	10¾
IVORY BLACK, dry..per cwt.	8	6	..	0	0	0	0	..	0	0
MAGNESIA, calcined..per lb.	1	2	..	1	3	1	2	..	0	0
MERCURY...... .. per bottle	210	0	..	220	0	225	0	..	0	0
MINIUM, red ......per cwt.	21	3	..	21	6	20	0	..	21	0
orange .... ,,	31	6	..	32	0	31	6	..	0	0
PRECIPITATE, red ....per lb.	3	4½	..	0	0	3	8	..	0	0
white .. ,,	3	3½	..	0	0	3	7	..	0	0
PRUSSIAN BLUE ...... ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum ....per ton	160	0	..	170	0	0	0	..	0	0
powder .... ,,	180	0	..	0	0	150	0	..	160	0
Ammonia:										
Carbonate ......per lb.	0	7	..	0	7¼	0	5¾	..	0	6½
Hydrochlorate, crude, white........ per ton	560	0	..	620	0	460	0	..	560	0
British (see Sal Ammoniac)										
Sulphate ......per ton	450	0	..	460	0	340	0	..	0	0
Argol, Cape ......per cwt	72	0	..	92	0	57	0	..	71	0
France .... ,,	0	0	..	0	0	0	0	..	0	0
Oporto, red ,,	24	0	..	28	0	22	0	..	24	0
Sicily .... ,,	62	0	..	65	0	0	0	..	0	0
Naples, white ,,	62	0	..	65	0	0	0	..	0	0
Florence, white	0	0	..	0	0	0	0	..	0	0
,, red ,,	0	0	..	0	0	0	0	..	0	0
Ashes (see Potash and Soda)										
Bleaching powd..per cwt.	16	6	..	0	0	11	6	..	11	9
Borax, crude .... ,,	60	0	..	80	0	42	6	..	60	0
(Tincal) .. ,,	47	0	..	65	0	45	0	..	60	0
British refnd. ,,	100	0	..	0	0	63	0	..	70	0
Calomel ....per lb.	3	2½	..	0	0	3	7	..	0	0
Copper:										
Sulphate ......per cwt.	29	6	..	33	0	22	0	..	23	0
Copperas, green ..per ton	60	0	..	65	0	50	0	..	60	0
Corrosive Sublimate..p.lb.	2	7½	..	0	0	2	10	..	0	0
Cr. Tartar, French, p. cwt.	115	0	..	0	0	102	6	..	0	0
Venetian grey ,,	115	0	..	110	0	105	0	..	0	0
brown ,,	0	0	..	0	0	0	0	..	0	0
Epsom Salts ....per cwt.	5	6	..	6	0	6	0	..	7	0
Glauber Salts .... ,,	4	6	..	6	0	4	6	..	6	0
Lime:										
Acetate, white, per cwt.	13	6	..	28	0	12	6	..	23	0
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	0	0
Potash:										
Bichromate ....per lb.	0	8	..			0	5	..	0	5¼
Carbonate:										
Potashes, Canada, 1st sort ......per cwt.	45	6	..	46	0	32	9	..	0	0
Pearlashes, Canada, 1st sort ......per cwt.	49	0	..	49	6	40	0	..	0	0
Chlorate ....per lb.	1	10	..	0	0	1	0	..	0	0
Prussiate ...... per lb.	1	8½	..	1	9	1	0	..	0	0
red .... ,,	3	2	..	3	3	1	9½	..	1	10
Tartrate (see Argol and Cream of Tartar)										
Potassium:										
Chloride ......per cwt.	11	0	..	0	0	13	0	..	0	0
Iodide.......... per lb.	35	0	..	0	0	14	6	..	15	0
Quinine:										
Sulphate, British, in bottles ...... per oz.	7	9	..	0	0	7	8	..	7	9
Sulphate, French ,,	7	6	..	0	0	7	6	..	0	0
Sal Acetos ....per lb.	1	4½	..	0		0	11	..	0	0
Sal Ammoniac, Brit. cwt.	47	0	..	43		41	0	..	42	0
Saltpetre:										
Bengal, 6 per cent or under ......per cwt.	30	3	..	30	9	28	0	..	23	6
Bengal, over per cent. per cwt.	29	6	..	30	0	25	6	..	27	6
Madras........ ,,	0	0	..	0	0	0	0	..	0	0
Bomb. & Kurrachee p.ct.	0	0	..	0	0	0	0	..	0	0
European...... ,,	0	0	..	0	0	0	0	..	0	0
British, refined ,,	34	0	..	34	6	30	6	..	31	6
Soda: Bicarbonate, p.cwt.	15	6	..	16	0	10	9	..	11	0
Carbonate:										
Soda Ash.... perdeg.	0	3	..	0	3⅛	0	2	..	0	2⅛
Soda Crystals per ton	137	6	..	0	0	82	6	..	35	0
Hyposulphite..per cwt	16	0	..	16	6	18	0	..	0	0

	1872.					1871.				
	s.	d.		s.	d.	s.	d.		s.	d.
Soda:										
Nitrate ....per cwt.	16	0	to	0	0	16	3	to	16	6
SUGAR OF LEAD, White, cwt.	43	0	..	44	0	39	0	..	40	0
Brown .... ,,	31	0	..	0	0	26	0	..	28	0
SULPHUR (see Brimstone										
VERDIGRIS .... per lb.	1	1	..	1	3	1	0	..	1	2
VERMILION, English..per lb.	3	4	..	3	6	3	8	..	3	10
China.... ,,	3	6	..	0	0	3	6	..	0	0

DRUGS.

	s.	d.		s.	d.	s.	d.		s.	d.
ALOES, Hepatic....per cwt.	70	0	..	220	0	70	0	..	210	0
Socotrine .. ,,	120	0	..	300	0	120	0	..	325	0
Cape, good.. ,,	35	0	..	38	0	22	0	..	27	0
Inferior ,,	25	0	..	34	0	17	0	..	21	0
Barbadoes ,,	75	0	..	210	0	70	0	..	200	0
AMBERGRIS, grey........ oz.	26	0	..	29	0	25	0	..	28	0
BALSAM —										
Canada .... per lb.	1	5	..	1	6	0	10	..	0	11
Capivi .... ,,	2	0	..	2	1	1	9	..	1	10
Peru .... ,,	9	3	..	9	4	9	2	..	0	0
Tolu .... ,,	2	0	..	2	1	1	11	..	1	11½
BARKS—										
Canella alba ....per cwt.	15	0	..	25	0	12	6	..	30	0
Cascarilla........ ,,	22	0	...	37	0	18	0	..	32	0
Peru, crown & grey per lb.	1	6	..	3	1	0	10	..	2	8
Calisaya, flat ,,	3	2	..	3	4	3	2	..	4	1
quill ,,	3	2	..	3	4	3	2	..	3	11
Carthagena ,,	0	10	..	2	7	0	10	..	1	10
Pitayo .... ,,	0	10	..	1	10	0	10	..	1	6
Red .... ,,	1	10	..	6	0	2	0	..	8	6
Bucho Leaves ...... ,,	0	4	..	1	0	0	5	..	0	9
CAMPHOR, China.. per cwt.	82	6	..	0	0	72	6	..	76	0
Japan ,,	85	0	..	0	0	72	6	..	80	0
Refin Eng. per lb.	1	4	..	0	0	1	2	..	1	2½
CANTHARIDES ...... ,,	7	6	..	7	9	5	0	..	0	0
CHAMOMILE FLOWERS p. cwt	45	0	..	70	0	40	0	..	65	0
CASTOREUM .... per lb.	3	0	..	30	0	3	0	..	30	0
DRAGON'S BLOOD, lp. p. cwt.	110	0	..	210	0	100	0	..	210	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices)										
Anise, China Star pr cwt.	130	0	..	0	0	110	0	..	115	0
German, &c. ,,	35	0	..	50	0	36	0	..	38	0
Beans, Tonquin .. per lb.	1	0	..	1	8	0	9	..	1	6
Cardamoms, Malabar good ,,	8	3	..	8	9	9	0	..	10	0
inferior ,,	7	0	..	8	0	8	0	..	9	0
Madras ,,	2	6	..	7	9	6	6	..	9	6
Ceylon ,,	3	0	..	0	0	2	9	..	3	0
Cassia Fistula.. per cwt.	12	0	..	30	0	12	0	..	30	0
Castor Seeds .. ,,	10	0	..	12	0	10	0	..	12	0
Cocculus Indicus ,,	18	0	..	19	0	12	6	..	13	6
Colocynth, apple.. per lb.	0	3	..	0	6	0	3	..	0	6
Croton Seeds .. per cwt.	56	0	..	60	0	80	0	..	87	0
Cubebs .... ,,	25	0	..	27	0	25	6	..	26	6
Cummin........ ,,	55	0	..	67	0	90	0	..	95	0
Dividivi .... ,,	12	0	..	15	0	12	0	..	13	0
Fenugreek...... ,,	11	0	..	21	0	15	0	..	20	0
Guinea Grains .. ,,	55	0	..	57	0	23	0	..	24	0
Juniper Berries ,,	11	6	..	12	6	15	0	..	15	6
Myrobalans .... ,,	13	6	..	18	0	10	0	..	15	6
Nux Vomica.... ,,	10	6	..	13	6	10	6	..	13	0
Tamarinds, East India ,,	2	0	..	14	0	8	0	..	12	0
West India, new ,,	12	0	..	30	0	8	0	..	14	0
Vanilla, large .... per lb.	41	0	..	55	0	30	0	..	45	0
inferior ,,	23	0	..	39	0	20	0	..	30	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, in bond (duty 1d. per lb.) per lb.	0	6½	..	0	10½	0	6	..	0	8
GUMS (*see separate list*)										
HONEY, Chili .... per cwt.	50	0	..	57	0	36	0	..	46	0
Cuba .... ,,	35	0	..	50	0	22	0	..	36	0
Jamaica.. ,,	40	0	..	56	0	31	0	..	52	0
IPECACUANHA .... per lb.	4	10	..	5	0	5	6	..	5	9
ISINGLASS, Brazil.. ,,	2	6	..	4	7	2	10	..	4	6
Tongue sort ,,	3	3	..	5	3	3	8	..	5	1
East India ,,	1	5	..	3	10	1	7	..	4	0
West India ,,	3	10	..	4	0	3	10	..	4	4
Russ. long staple	6	0	..	9	6	5	6	..	8	0
,, leaf ,,	3	6	..	6	6	3	0	..	5	6
,, Simovia	2	0	..	3	6	2	0	..	3	6
JALAP, good ...... ,,	1	6	..	2	8	1	8	..	3	0
infer. & stems ,,	0	6	..	1	5	0	6	..	1	6
LEMON JUICE ... per degree	0	1	..	0	1⅛	0	1	..	0	1¼
LIQUORICE, Spanish per cwt.	35	0	..	37	0	0	0	..	0	0
Italian ,,	40	0	..	60	0	40	0	..	60	0
MANNA, flaky .... per lb.	3	3	..	3	6	3	6	..	4	0
small...... ,,	2	0	..	0	0	2	0	..	2	2
MUSK.............. per oz.	20	0	..	46	0	20	0	..	38	0
OILS (*see also separate List*)										
Almond, expressed per lb.	1	3	..	0	0	1	1	..	0	0
Castor, 1st pale .... ,,	0	5½	..	0	5¾	0	4¾	..	0	5
second .... ,,	0	5	..	0	5¼	0	4½	..	0	4¾
infer. & dark ,,	0	4¾	..	0	4¾	0	4	..	0	4½
Bombay (in casks)	0	4¼	..	0	4½	0	4	..	0	4½
Cod Liver ......per gall.	5	0	..	6	0	5	0	..	6	0
Croton............per oz.	0	3½	..	0	4½	0	3½	..	0	4½
Essential Oils:										
Almond ....per lb	35	0	..	0	0	42	0	..	0	0
Anise-seed ......per lb.	11	0	..	11	3	8	7½	..	0	0
Bay ....per cwt.	65	0	..	70	0	65	0	..	70	0
Bergamot ......per lb.	8	9	..	15	0	8	0	..	15	0
Cajeput, (in bond) per oz.	0	1½	..	0	3	0	2½	..	0	3
Caraway ....per lb.	5	6	..	6	3	5	6	..	6	3
Cassia .... ,,	5	8	..	5	9	4	6	..	4	7
Cinnamon ......per oz.	0	10	..	3	0	1	0	..	4	6
Cinnamon-leaf.. ,,	0	2	..	0	4½	0	2	..	0	6

	1872.					1871.				
Essential Oils, *continued*:—	s.	d.		s.	d.	s.	d.		s.	d.
Citronelle ......per oz.	0	2	to	0	0	0	2	to	0	2½
fine.... ,,	0	0	..	0	0	0	2⅜	..	0	0
Clove............per lb.	3	6	..	0	0	2	5	..	2	6
Juniper .... ,,	1	9	..	2	0	1	0	..	2	0
Lavender........ ,,	3	6	..	6	0	3	0	..	4	3
Lemon.......... ,	10	0	..	18	0	5	0	..	9	6
Lemongrass ....per oz.	0	4	..	0	0	0	2⅜	..	0	3
Neroli .... ,,	0	5	..	0	6	0	5	..	0	6
Nutmeg .... ,,	0	4½	..	0	8½	0	4	..	0	7½
Orange..........per lb.	7	0	..	8	0	5	0	..	7	0
Otto of Roses....per oz.	12	0	..	21	0	12	0	..	20	0
Patchouli ...... ,,	4	0	..	0	0	3	0	..	0	0
Peppermint:										
American ....per lb.	13	6	..	14	6	15	0	..	16	0
English ...... ,,	30	0	..	33	0	33	0	..	34	0
Rosemary ...... ,,	1	9	..	2	0	1	9	..	2	0
Sassafras........ ,,	3	0	..	3	6	3	0	..	0	0
Spearmint ...... ,,	4	0	..	16	0	4	0	..	16	0
Thyme.......... ,,	1	10	..	2	0	1	10	..	2	0
Mace, expressed .. per oz.	0	1½	..	0	3	0	1½	..	0	3
Opium, Turkey ...... per lb.	20	0	..	21	0	28	0	..	80	0
inferior ...... ,,	12	0	..	19	0	16	0	..	27	0
Quassia(bitter wood) per ton	80	0	..	82	6	60	0	..	70	0
Rhubarb, China, good and fine ....per lb.	2	3	..	6	0	2	6	..	5	6
Good, mid. to ord. ,,	0	5	..	2	0	0	3	..	1	9
Dutch trimmed ,,	0	0	..	0	0	0	0	..	0	0
Russian .... ,,	0	0	..	0	0	0	0	..	0	0
ROOTS—Calumba..per cwt.	28	0	..	40	0	25	0	..	42	0
China .... ,,	24	0	..	26	0	20	0	..	25	0
Galangal .... ,,	17	0	..	18	0	15	0	..	17	0
Gentian .... ,,	19	6	..	0	0	23	0	..	0	0
Hellebore ...... ,,	30	0	..	35	0	22	0	..	30	0
Orris............ ,,	65	0	..	75	0	61	0	..	62	0
Pellitory .... ,,	60	0	..	63	0	58	0	..	60	0
Pink..............per lb.	0	9	..	1	3	0	7	..	1	0
Rhatany .... ,,	0	4	..	0	11	0	5	..	0	10
Seneka............ ,,	5	3	..	5	4	4	6	..	5	0
Snake .... ,,	1	2	..	1	3	0	11	..	1	0
Saffron, Spanish .. ,,	30	0	..	42	6	35	0	..	44	0
Salep ....per cwt.	170	0	..	200	0	110	0	..	0	0
Sarsaparilla, Lima per lb.	0	8	..	0	11	0	6	..	0	7¾
Para.............. ,,	1	0	..	1	3	1	0	..	1	3
Honduras .... ,,	1	2	..	1	8	1	1	..	1	8
Jamaica .... ,,	1	7	..	2	11	1	7	..	3	2
Sassafras ....per cwt.	0	0	..	0	0	0	0	..	0	0
Scammony, Virgin ..per lb.	26	0	..	32	0	25	0	..	29	0
second & ordinary ,,	10	0	..	25	0	10	0	..	23	0
Senna. Bombay .... ,,	0	2	..	0	5	0	3¼	..	0	5½
Tinnivelly .... ,,	0	2¾	..	1	4	0	4	..	1	6
Alexandria........ ,,	0	3¼	..	1	7	0	4	..	1	7
Spermaceti, refined.. ,,	1	6	...	0	0	1	6	..	1	7
American .... ,,	1	2	..	1	3	1	3	..	1	4
Squill.............. ,,	0	1¼	..	0	2	0	1	..	0	2

GUMS.

	1872.					1871.				
Ammoniaci drop ..per cwt.	90	0	..	165	0	80	0	..	100	0
lump .. ,,	55	0	..	80	0	50	0	..	75	0
Animi, fine washed ,,	300	0	..	340	0	250	0	..	320	0
bold scraped ,,	230	0	..	290	0	200	0	..	240	0
sorts ...... ,,	160	0	..	260	0	100	0	..	200	0
dark ...... ,,	100	0	..	150	0	70	0	..	100	0
Arabic, E. I., fine pale picked .. ,,	73	0	..	78	6	62	0	..	70	0
srts, gd. to fin ,,	60	0	.	72	0	52	0	..	61	0
garblings.. ,,	25	0	..	50	0	25	0	..	45	0
Turkey, pick. gd to fin. ,,	160	0	..	200	0	160	0	..	200	0
second & inf. ,,	85	0	..	150	0	85	0	..	155	0
in sorts .. ,,	65	0	..	80	0	70	0	..	90	0
Gedda.... ,,	30	0	..	42	0	38	0	..	44	0
Barbary, white .. ,,	0	0	..	0	0	65	0	..	70	0
brown .. ,,	40	0	..	46	0	48	0	..	50	0
Australian ...... ,,	30	0	..	46	0	20	0	..	42	0
Assafœtida, com. to gd ,,	35	0	..	120	0	30	0	..	90	0
Benjamin, 1st qual. ,,	180	0	..	500	0	160	0	..	400	0
2nd ,, ,,	150	0	..	210	0	140	0	..	210	0
3rd ,, ,,	65	0	..	85	0	40	0	..	85	0
Copal, Angola red ,,	135	0	..	140	0	120	0	..	140	0
Benguela .. ,,	105	0	..	112	6	90	0	..	95	0
Sierra Leone..per lb.	0	3½	..	0	11	0	3	..	1	1
Manilla ....per cwt.	20	0	..	38	0	16	6	..	42	6
Dammar, pale .... ,,	60	0	..	62	0	60	0	..	61	0
Euphorbium ...... ,,	15	0	..	17	0	13	0	..	14	0
Galbanum .... ,,	200	0	..	260	0	200	0	..	260	0
Gamboge, pckd. pipe ,,	300	0	..	340	0	260	0	..	300	0
Guaiacum ....per lb.	0	9	..	2	10	0	9	..	2	7
Kino..............per cwt.	60	0	..	90	0	60	0	..	120	0
Kowrie, rough.... ,,	17	0	..	35	0	25	0	..	36	0
scraped .. ,,	36	0	..	90	0	38	0	..	90	0
Mastic, picked......per lb.	6	0	..	7	3	6	0	..	7	0
Myrrh, gd. & fine per cwt.	125	0	..	200	0	120	0	..	160	0
sorts......	85	0	..	120	0	80	0	..	115	0
Olibanum, p. sorts	76	0	..	80	0	75	0	..	80	0
amber & ylw.	68	0	..	75	0	67	6	..	74	0
garblings.... ,,	20	0	..	44	0	19	6	..	44	0
Senegal ....per cwt.	70	0	..	80	6	65	0	..	85	0
Sandarac .... ,,	53	0	..	100	0	55	0	..	111	0
Shellac, Orange.... ,,	160	0	..	182	6	122	6	..	140	0
Liver...... ,,	150	0	..	160	0	117	6	..	127	0
Thus.............. ,,	20	0	..	22	0	13	0	..	14	0
Tragacanth, leaf.. ,,	200	0	..	450	0	200	0	..	300	0
in sorts ,,	110	0	..	180	0	110	0	..	180	0

OILS.

	1872.					1871.				
Seal, pale..........per tun	£38	0	..	0	0	£37	10	..	0	0
yellow to tinged ,,	35	0	..	37	0	33	0	..	36	0
brown........ ,,	33	0	..	0	0	31	0	..	0	0
Oils, *continued*:—	£	s.		£	s.	£	s.		£	s.
Cod................ per tun	33	10	to	34	0	35	10	to	0	0
Whale, South Sea, pale ,,	36	10	..	0	0	36	0	..	37	0
yellow ,,	34	0	..	36	0	35	0	..	0	0
brown ,,	32	0	..	0	0	32	0	..	0	0
East India, Fish ,,	28	0	..	0	0	28	0	..	29	0
Olive, Galipoli ...... ,,	51	0	..	0	0	49	0	..	0	0
Trieste ...... ,,	50	0	..	50	10	48	0	..	0	0
Levant ...... ,,	49	0	..	0	0	48	0	..	0	0
Mogador...... ,,	47	10	..	48	0	48	0	..	0	0
Spanish ...... ,,	50	0	..	51	10	48	0	..	48	10
Sicily .... ,,	50	0	..	0	0	47	10	..	48	0
Cocoanut, Cochin.. per ton	42	0	..	44	0	45	0	..	48	0
Ceylon .. ,,	37	10	..	38	0	40	0	..	40	10
Sydney ,,	32	0	..	33	0	33	0	..	38	0
Ground Nut and Gingelly:										
Bombay	0	0	..	0	0	0	0	..	0	0
Madras..................	40	0	..	41	0	43	0	..	44	0
Palm, fine	38	0	..	38	10	38	0	..	38	10
Linseed	33	10	..	33	15	33	0	..	0	0
Rapeseed, English, pale ..	43	10	..	0	0	47	0	..	0	0
brown........	41	10	..	0	0	45	0	..	0	0
Foreign pale....	44	0	..	44	10	49	0	..	0	0
brown........	0	0	..	0	0	45	0	..	0	0
Cottonseed	32	10	..	0	0	28	10	..	34	0
Lard....................	50	0	..	53	0	68	0	..	70	0
Tallow	36	0	..	0	0	36	0	..	0	0
Turpentine, American, cks.	56	0	..	56	6	36	6	..	0	0
Petroleum, Crude	0	0	..	0	0	0	0	..	0	0
	s.	d.		s.	d.	s.	d.		s.	d.
refined, per gall.	1	5¼	..	1	5¾	1	5	..	0	0
Spirit ,,	0	10½	..	0	0	0	11	..	1	0

SEEDS.

	1872.					1871.				
Canary ....per qr.	52	0	..	53	0	46	0	..	54	0
Caraway, English per cwt.	0	0	..	0	0	0	0	..	0	0
German, &c.....	32	6	..	35	0	0	0	..	0	0
Coriander	0	0	..	0	0	0	0	..	0	0
Hemp ....per qr.	40	0	..	44	0	44	0	..	43	0
Linseed, English per qr...	0	0	..	0	0	0	0	..	0	0
Black Sea & Azof	61	0	..	0	0	63	6	..	64	6
Calcutta ,,	62	6	..	62	9	63	3	..	[illegible]	0
Bombay ,,	63	6	..	0	0	64	0	..	0	0
St. Petrsbrg. ,,	0	0	..	0	0	59	0	..	60	0
Mustard, brown..per bshl.	0	0	..	0	0	0	0	..	0	0
white.. ,,	8	0	..	0	6	9	0	..	9	6
Poppy, East India per qr.	65	6	..	66	0	60	6	..	0	0

SPICES.

	1872.					1871.				
Cassia Lignea ....per cwt.	104	0	..	118	0	93	0	..	112	0
Vera .... ,,	42	0	..	92	0	45	0	..	80	0
Buds .... ,,	130	0	..	140	0	140	0	..	170	0
Cinnamon, Ceylon, 1st quality ....per lb.	2	4	..	3	8	2	2	..	3	5
2nd do. ...... ,,	1	9	..	3	5	1	8	..	3	4
3rd do. ...... ,,	1	7	..	2	11	1	7	..	3	2
Tellicherry ...... ,,	2	7	..	3	2	0	0	..	0	0
Cloves, Penang.... ,,	1	3	..	1	4	1	1	..	1	2
Amboyna........ ,,	0	5	..	0	10½	0	4¾	..	0	6½
Zanzibar .... ,,	0	4¾	..	0	0	0	2⅜	..	0	3
Ginger, Jam., fine per cwt.	90	0	..	180	0	80	0	..	180	0
Ord. to good .. ,,	47	0	..	87	0	33	0	..	77	0
African.......... ,,	37	0	..	38	0	30	0	..	0	0
Bengal .... ,,	32	0	..	0	0	25	0	..	0	0
Malabar .... ,,	38	0	..	0	0	0	0	..	0	0
Cochin .... ,,	48	0	..	110	0¼	34	0	..	105	0
Pepper, Blk, Malabar, per lb.	0	7	..	0	7	0	5⅞	..	0	6¼
Singapore........ ..	0	6¼	..	0	0	0	5⅜	..	0	5½
White, Tellicherry ,,	0	0	..	0	0⅝	0	9½	..	1	2½
Cayenne .... ,,	1	4	..	1	10	0	8½	..	1	4½
Mace, 1st quality ..per lb.	4	1	..	4	6	3	3	..	3	10
2nd and inferior.. ,,	3	8	..	4	0	2	5	..	3	2
Nutmegs, 78 to 60 to lb.	3	5½	..	4	1	2	7	..	4	0
90 to 80 ,,	3	3	..	3	4½	2	4	..	2	6
132 to 95 ,,	2	11	..	3	2½	1	8	..	2	3

VARIOUS PRODUCTS.

	1872.					1871.				
COCHINEAL—										
Honduras, black ..per	2	6	..	3	6	2	5	..	3	6
,, silver .. ,,	2	6	..	2	9	2	5	..	2	9
,, pasty .. ,,	2	5	..	0	0	1	10	..	2	4
Mexican, black .... ,,	2	7	..	2	9	2	5	..	2	9
,, silver .... ,,	2	6	..	0	0	2	4	..	2	5
Teneriffe, black....	2	6	..	4	6	2	5	..	3	9
,, silver.... ,,	2	6	..	2	8	2	4	..	2	6
PUMICE STONE ..per ton	120	0	..	150	0	120	0	..	150	0
SOAP, Castile ....per cwt.	35	0	..	0	0	35	0	..	0	0
SPONGE, Turk. fin pkd pr lb.	12	0	..	16	0	12	0	..	16	0
Fair to good .. ,,	4	0	..	11	0	4	0	..	11	0
Ordinary...... ,,	1	0	..	3	6	1	0	..	3	6
Bahama.............. ..	0	6	..	2	6	0	6	..	2	6
TERRA JAPONICA—										
Gambier .. per cwt.	22	6	..	23	9	15	3	..	15	6
Free cubes ,,	24	0	..	25	6	18	0	..	20	0
Cutch ..... ,,	25	0	..	26	6	19	6	..	22	0
WOOD, Dye, Bar ..per ton	£3	15	..	£4	5	£3	15	..	£4	0
Brazil .... ,,	0	0	..	0	0	0	0	..	0	0
Brazilletto .... ,,	0	0	..	0	0	0	0	..	0	0
Cam .... ,,	20	0	..	22	0	17	0	..	24	0
Fustic, Cuba...... ,,	9	0	..	10	5	7	10	..	8	10
Jamaica .... ,,	7	5	..	3	15	5	10	..	6	15
Savanilla........ ,,	2	2/6	..	0	0	0	0	..	0	0
Logwood, Campeachy ,,	9	10	..	10	0	9	10	..	10	0
Honduras ...... ,,	0	0	..	0	0	5	10	..	6	10
St. Domingo .... ,,	0	0	..	0	0	4	7/6	..	6	0
Jamaica .... ,,	5	5	..	5	7/6	4	10	..	4	15
Lima, first pile.... ,,	8	10	..	10	6	9	0	..	10	10
Red Sanders .... ,,	7	10	..	7	12,0	5	5	..	0	0